



# LiquidOffice™ Install & Admin Guide

*Version 6.2*

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# CHAPTER 1

## Introduction

### ABOUT THIS CHAPTER

This chapter will show you how the six eForms processes work together to provide a consistent and easy-to-use product.

If you have purchased the LiquidOffice Form Designer as a stand alone product and your company has not purchased the LiquidOffice eForm Management System, much of the material contained in this Guide is not applicable to you. For more information on using the LiquidOffice Form Designer to design and create forms, refer to the LiquidOffice Form Designer online help.

### WHAT IS LIQUIDOFFICE?

LiquidOffice™ is a powerful Web-based eForm automation solution for creating, deploying and automatically managing the routing, tracking and approval processes for electronic forms. LiquidOffice is the fastest way for organizations to put forms online and automate the mission critical processes they drive.

LiquidOffice provides enterprises and government organizations with a solution that automates all aspects of forms and documents. Using industry standards — XML, HTML, PDF — LiquidOffice streamlines the creation, routing, tracking, approval and signing of online eForms. Our XML-based business process automation solution generates database queries for real-time validation. It routes forms to the appropriate department and notifies managers by email when digital approvals are needed. This results in efficient and secure electronic processing of enterprise information. By adhering to open standards, LiquidOffice promises to be the last migration customers will have to make.

### New Technology

The LiquidOffice eForm Management System is a dramatic technology shift in the eForms market segment, for the first time combining an n-tiered Web architecture with PDF, XML, and HTML to enable enterprise and global use of eForms.

By using an open system approach, organizations can deploy automated online forms without using proprietary form formats and “Filler” applications.

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## KEY COMPONENTS

LiquidOffice is made up of the following key components:

- **LiquidOffice Form Designer:** The LiquidOffice Form Designer allows you to create forms from scratch, import existing PDF forms, and publish to PDF and HTML.
- **LiquidOffice Server:** The LiquidOffice Server allows you to host forms and interact with forms for validation, database lookup, submission, round tripping of data, routing, and approval.
- **LiquidOffice Web Desktop:** The LiquidOffice Web Desktop allows you to access forms in a central eform repository. Forms can be filled, routed, and approved using a standard browser.
- **LiquidOffice Process Studio:** The LiquidOffice Process Studio enables the design and execution of structured processes from a centralized server.
- **LiquidOffice Management Console:** The LiquidOffice Management Console allows you to perform a variety of LiquidOffice administrative tasks, such as managing users, roles, forms, folders, processes, work queues, server settings and connect agents.

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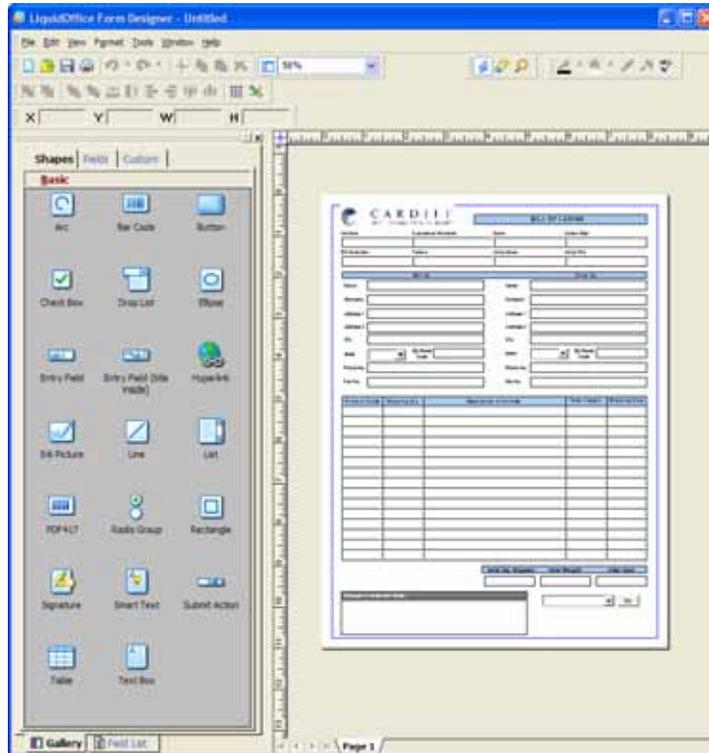
## LiquidOffice Form Designer

LiquidOffice Form Designer is used by form designers to create forms and publish them to the LiquidOffice Server.

All forms created in the LiquidOffice Form Designer are saved as XML using LiquidOffice Form Designer's native file format: XFM. The forms can then be published as PDF or HTML files. Future publishing agents will be available as market demand requires it.

LiquidOffice Form Designer allows you to:

1. Create forms from scratch and import existing PDF forms, including, but not limited to:
  - Setting up field types, formats, templates, titles, styles, and storage characteristics,
  - Setting up field validations (e.g. ranges, database validations, etc.),
  - Setting up field calculations and database lookups,
  - Writing custom JavaScript for validations, calculations, etc.,
  - Supporting multi-page forms.
2. Publish forms to a server as PDF and HTML files.



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## LiquidOffice Server

LiquidOffice Server is comprised of the following components:

- Presentation Server
- Process Server

### Presentation Server

LiquidOffice Presentation Server hosts the Management Console, Process Studio, Publishing Wizard, and My Data Client and builds the gateway to the Process Server. It hosts and renders the localized Web Desktop dynamically.

### Process Server

LiquidOffice Process Server hosts the forms and processes published from the Form Designer and Process Studio. The server is responsible for serving up forms, interacting with the forms for lookups, validations and form submittals including routing. Moreover, the Process Server handles the initiation, management, and tracking of processes while also serving as the engine for enforcing the business rules specified by the process definition.

### Additional Components

LiquidOffice Server also uses the following components:

- Database Server
- LDAP Server (optional)

### Sample Deployments

The following pages show simple diagrams of different possible configurations for the LiquidOffice Server. These examples are far from exhaustive:

- [“Single Machine Hosting Both Process and Presentation Server” on page 13](#)
- [“Separate Machines for Process Server and Presentation Server” on page 14](#)
- [“Cluster Example” on page 15](#)

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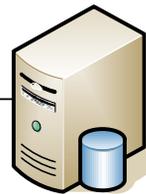
## Single Machine Hosting Both Process and Presentation Server

The example below shows the default single-server installation. The Process Server and Presentation Server run on the same machine, while the LiquidOffice Database runs on a separate computer. This structure offers the greatest security for your data, since an error at the LiquidOffice Server will not necessarily affect the database.

Process Server  
&  
Presentation Server  
on one machine



LiquidOffice  
Database



### Installed Components :

1. Process Server
2. Presentation Server
  - Tomcat  
or
  - WebLogic  
or
  - WebSphere

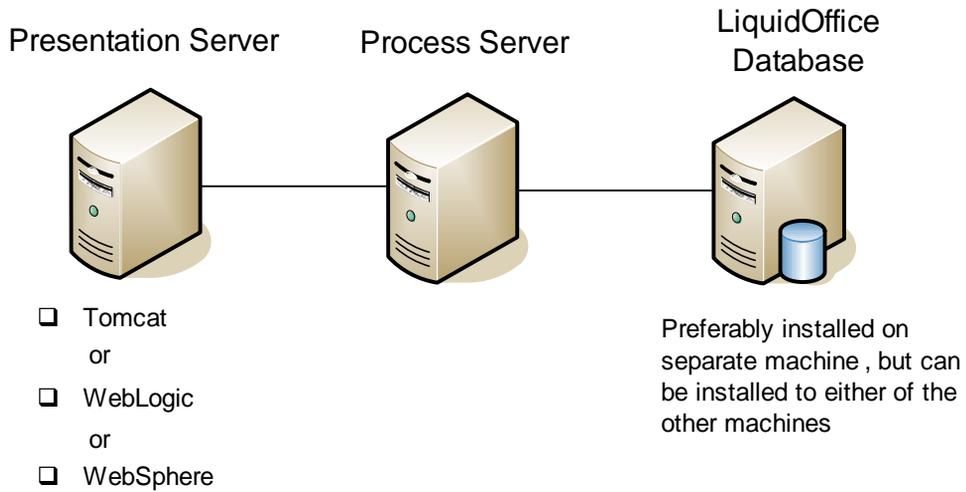
Preferably installed on  
different machine , but can  
be installed to the same  
machine as the  
LiquidOffice Server

---

## Separate Machines for Process Server and Presentation Server

The Presentation Server acts as the “public face” of the LiquidOffice Server. It can run on a completely separate machine from the Process Server.

We recommend that the LiquidOffice Database run on a machine separate from both the Process Server and the Presentation Server.

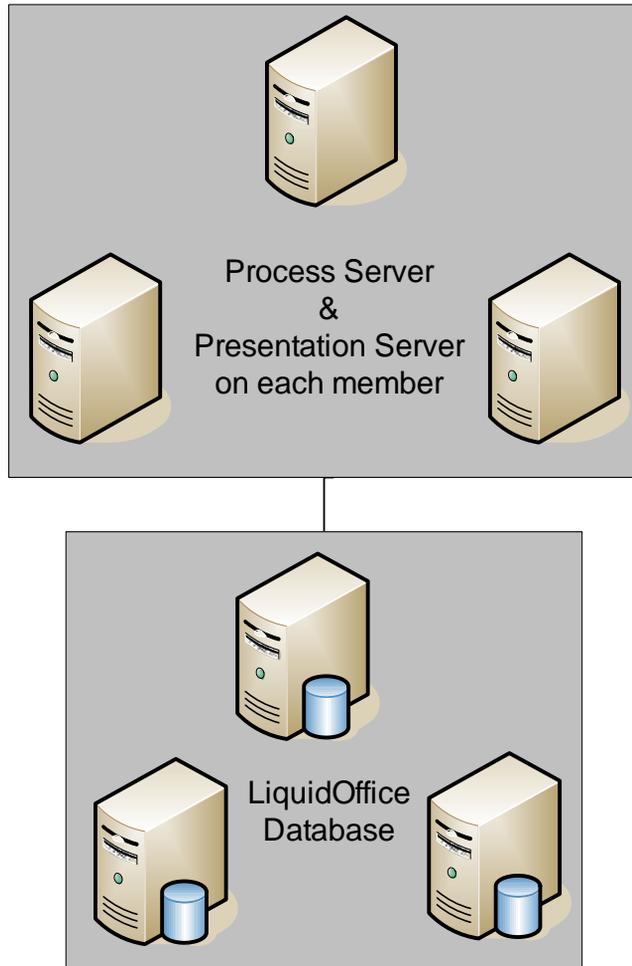


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## Cluster Example

This example shows the recommend deployment of Process Servers and Presentation Servers. Although it is possible to run a Process Server cluster separately from a Presentation Server cluster, this approach is usually expensive and complicated. The LiquidOffice Database is shown running on a cluster, but it can run on a single machine even when the LiquidOffice Server is clustered.

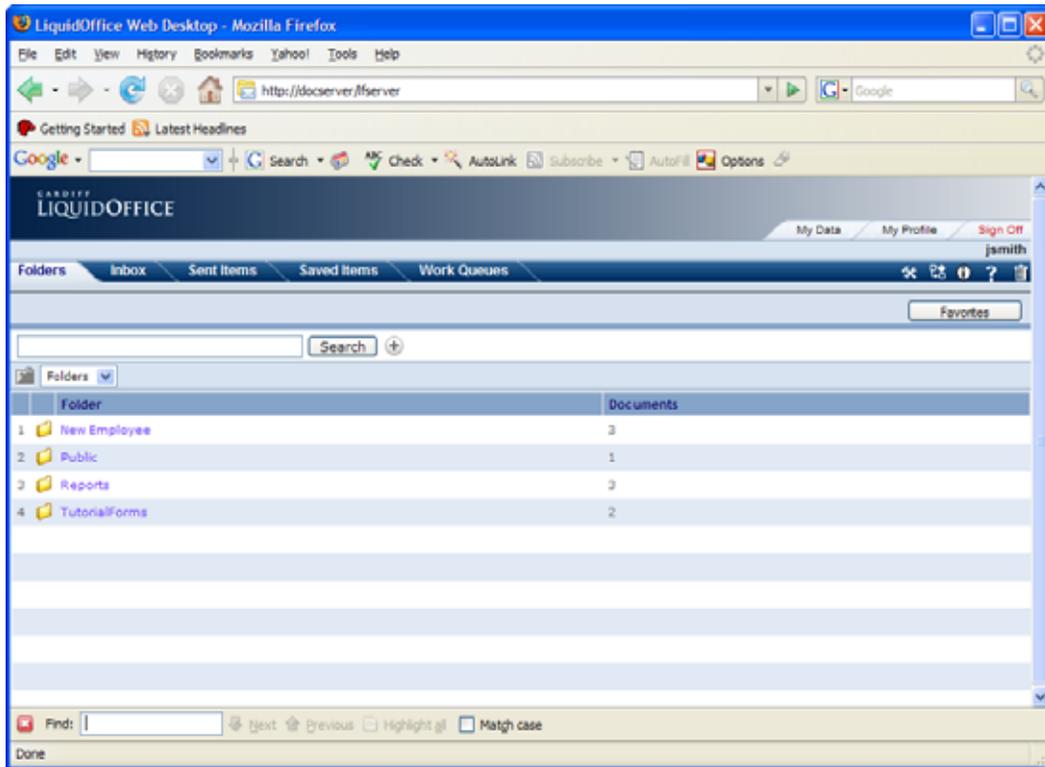
This diagram does not show the required Load Balancer for the LiquidOffice Server cluster.



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## LiquidOffice Web Desktop

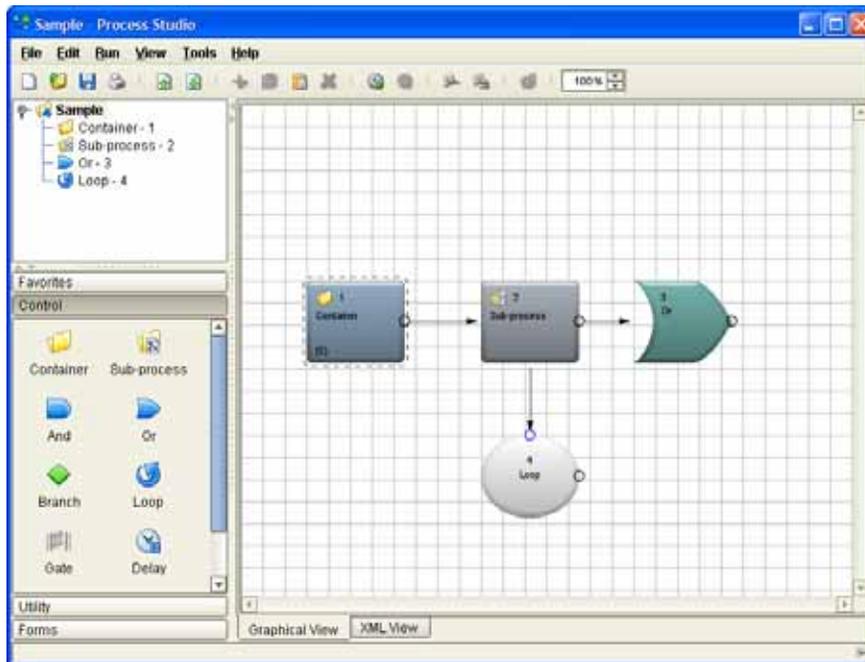
LiquidOffice Web Desktop provides access to published forms and processes, and supplies the user interface for routing these forms and processes. A standard web browser is used to display the Web Desktop.



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## LiquidOffice Process Studio

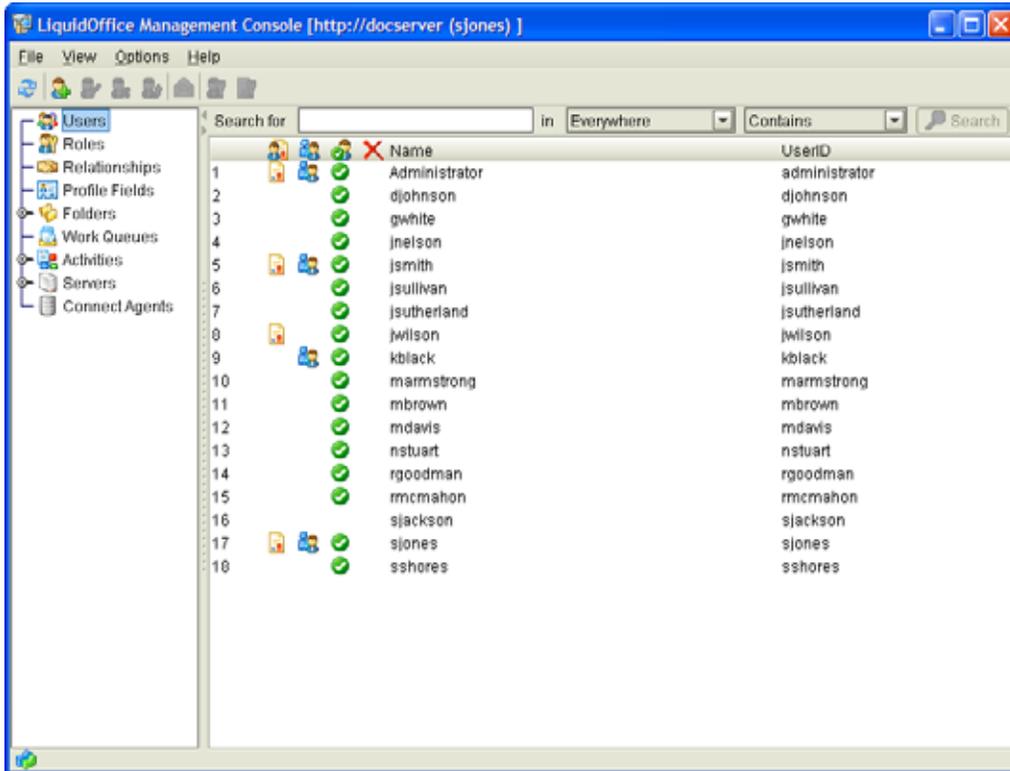
LiquidOffice Process Studio is used by process designers to create processes and publish them to the LiquidOffice Server. Process Studio is downloaded from the LiquidOffice Server to the workstation through Java Web Start.



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## LiquidOffice Management Console

LiquidOffice Management Console provides administration capabilities for all aspects of the server. Management Console is downloaded from the LiquidOffice Server to the workstation through Java Web Start.



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## Other Options

LiquidOffice offers additional options to meet specific business needs:

- [E-mail Routing Option](#)
- [Enterprise Access Option](#)
- [Mobile Option](#)
- [Offline Forms Option](#)
- [Public Access Option](#)

## E-mail Routing Option

The **E-mail Routing Option** allows LiquidOffice users and Anonymous users to route forms in an ad-hoc environment to e-mail addresses.

## Enterprise Access Option

The **Enterprise Access Option** allows users who do not need to approve forms and processes to use LiquidOffice, such as non-managerial employees. These users can initiate forms and processes and are provided with log-ins and user profiles within LiquidOffice.

## Mobile Option

The **Mobile Option** provides LiquidOffice users who are granted the right to approve forms and processes the ability to approve using a mobile wireless handheld device. These users will have access to a secure LiquidOffice Inbox within the mobile device user interface in order to access pertinent information related to the forms and processes and to submit approval.

## Offline Forms Option

The **Offline Forms Option** allows you to save HTML forms offline (i.e. locally; on your hard drive). This is useful when you would like to save a form (perhaps already partially filled out) to your hard drive, load the form and data while offline for subsequent filling and saving, and load the form while online for submission to the LiquidOffice Server.

## Public Access Option

The **Public Access Option** enables use of the LiquidOffice by public users who do not have accounts on the LiquidOffice Server.

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## LIQUIDOFFICE ADVANTAGES

**Open eForms format support:** LiquidOffice uses open eForm standards to implement automated solutions without proprietary clients or plug-ins.

**Ad Hoc & Structured Process:** LiquidOffice supports ad-hoc and structured processes based on defined business rules.

**Forms Management:** LiquidOffice provides a turnkey Web-based eForm Repository allowing global organizations to access forms anywhere, anytime.

**Paper form automation:** Integration with TeleForm provides seamless support for paper forms as well as online formats.

**Open Connectivity:** Forms processed through LiquidOffice can be connected to data targets using pre-built Connect Agents, which support XML, ODBC or JDBC compliant applications. Archive Connect Agents are used to store PDF copies of completed forms, along with XML index data, into back-end systems.

**Web Services support:** The LiquidOffice SOAP API enables tight integration with other enterprise application environments.

**Integration with existing LDAP Directory Services:** LiquidOffice can synchronize its users and groups with a central directory server, providing LiquidOffice users with a single login access into the LiquidOffice Server. LiquidOffice provides seamless connectivity between the LiquidOffice Server and a central directory service using the standard Lightweight Directory Access Protocol (LDAP).

**Database Validation:** Business rules such as database look-ups and validations can be applied to form fields to ensure data accuracy before your data is exported to your database.

**Database Lookups:** Database Lookups streamline and improve the process of filling out a form. The Lookup feature performs look-ups to an existing database and pre-populates form fields, minimizing manual data entry.

**Back Office Security:** Administrators can limit which LiquidOffice users have access to configuring lookups, validations and exports to back-end databases.

**Advanced Form Routing:** LiquidOffice provides advanced form routing to eliminate the manual process of directing the form from point A to point B. Form routing significantly reduces paper shuffling as the form is circulated electronically throughout its course.

**Role-based Routing:** Route forms based upon a job function or relationship rather than to specific groups or individuals.

**Centralized Management:** The LiquidOffice Management Console is a rich client application that provides a point and click interface for managing users, permissions, folders, form settings and other administrative functions.

**Form Design Expression Builder:** Build form rules and validations using an intuitive point and click interface, eliminating the need to write script.

**Process Monitoring:** Monitor the status of form processes allowing form administrators to proactively take action when required.

**Script Editor:** The Script Editor provides users with the versatility and flexibility of adding custom scripting and business rules to further enhance transaction processing. Additionally, the Script Editor provides an intuitive and easy-to-use user interface.

**Autofill Fields:** This option allows you to set up a form to autofill certain fields based on data found in a user's profile.

**Enhanced User Interface and Functionality:** The Web Desktop allows user to view notes from the Inbox, view forms in process from the Sent Items folder, add attachments without opening the form and more.

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## SIX SIMPLE PROCESSES

The following six simple processes will help you identify each working aspect of LiquidOffice:

### I. Administer Users & Server

### II. Design Forms & Processes

### III. Publish Forms & Processes

### IV. Submit & Approve Forms

### V. Manage Forms & Processes

### VI. Retrieve Data

It is highly unlikely that one user will perform each of the six processes. These processes define the steps administrators, designers, approvers, and operators will take to get a form from conception through completion and use.

## I. Administer Users & Server

Before you can begin developing and publishing forms to the LiquidOffice Server, you must set up users and Connect Agents. This process includes signing into the LiquidOffice Server, installing LiquidOffice Management Console, setting up new users (or connecting to an LDAP Server), assigning users roles/access rights, and setting up the connect agents required to link your server(s) and your database(s).

## II. Design Forms & Processes

One of the first aspects to consider when using LiquidOffice is *the form itself*. Do you want to continue to use the forms you have grown used to on the job? Or, do you want to develop newer, more advanced ways of gathering data?

LiquidOffice Form Designer provides various options for designing or enhancing forms, including:

1. Importing existing PDF forms;
2. Using Texcel FormBridge® to convert forms from other formats (visit their website [www.texcel.com](http://www.texcel.com) for more information);
3. Using templates;
4. Designing forms from scratch.

In all cases, your forms can be published to PDF and/or HTML.

## Process Studio

LiquidOffice Process Studio allows you to design internal forms-driven processes and to automate mission-critical processes that require a structured environment.

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### III. Publish Forms & Processes

The publishing process involves publishing your forms and/or processes from LiquidOffice Form Designer and/or LiquidOffice Process Studio, respectively, to the LiquidOffice Server, setting up form properties, assigning form access, assigning data access, setting up form routing, and setting up data exports. The Server places the forms and processes in a designated location on the server for users to access.

### IV. Submit & Approve Forms

Once a form is published to the LiquidOffice Server, a user can access that form, complete it, and submit it. This process includes, but is not limited to, a user signing into the LiquidOffice Server, selecting the form he/she would like to submit, completing and submitting the form. Once a form has been submitted, it is often routed to an Approver for review. Users may also set up their Profile fields on the LiquidOffice Server prior to filling out forms. If a form has been set up with Profile fill options, this can save the user time by using the information already contained in their profile.

### V. Manage Forms & Processes

This function includes managing forms and processes after they have been published to the LiquidOffice Server. You can adjust the properties of the form including permissions, data access, routing, and data exports.

### VI. Retrieve Data

Once a form has been submitted and approved, an administrator or manager may wish to retrieve data. There are various ways to retrieve data, including:

**Data Exports and Export Script** — These allow you to send form data to an external database where you can retrieve it and put the information to work. The location or database where exported data is stored is usually set up by an administrator.

**Custom Connect Agents** — For specific information about the Custom Connect Agents, see the online help on the LiquidOffice Server.

**My Data Client** — My Data Client allows you to retrieve data from submitted forms that have been configured to use the My Data Client function. You can then save the data to a database on your local machine. Help from an administrator is not usually needed to set up this type of export.

**Reports** — You can also retrieve data, such as system overview or throughput information, in a report format.

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# CHAPTER 2

## System Requirements

### ABOUT THIS CHAPTER

This chapter provides information on system requirements for:

- “Web Desktop” on page 24
- “Mobile Option” on page 24
- “My Data Client” on page 25
- “Management Console” on page 25
- “Form Designer” on page 26
- “Process Studio” on page 27
- “LiquidOffice Server” on page 28
- “Internal Database Server” on page 29
- “Archive Database Server” on page 29
- “LDAP Server” on page 30

These requirements are subject to change. For more specific requirements and certified configurations, please visit <http://customers.cardiff.com>.

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## WEB DESKTOP

COMPONENT	NOTES
<b>OPERATING SYSTEM</b>	
Windows XP Professional SP2	English/German/French
Windows XP Home Edition SP2	English/German/French
Windows XP Tablet Edition SP2	English
Macintosh Safari OS X 10.5.x 'Leopard'	English
Windows Vista SP1	English/German/French
<b>ACROBAT</b>	
Acrobat 7.0.9	English/German/French
Acrobat Reader 7.0.9	English/German/French
Acrobat 8.x	English/German/French
Acrobat Reader 8.x	English/German/French
<b>BROWSER</b>	
Internet Explorer 6.0 SP2	
Internet Explorer 7.x	
Mozilla Firefox 2.0.0.11+	
Mac Safari 3.x	

## MOBILE OPTION

COMPONENT	NOTES
RIM Blackberry 8700, Pearl, Curve, 8800	8700 requires OS upgrade to 4.2.
Safari on iPhone	A Web Clip icon may be created on the user's Home screens and used as a type of bookmark for the LiquidOffice Mobile Desktop. Just use iPhone to browse to the LiquidOffice Web Desktop and click the (+) button.

## MY DATA CLIENT

COMPONENT	NOTES
Windows XP Professional SP2	English/German/French
Windows XP Home Edition SP2	English/German/French
Windows XP Tablet Edition SP2	English/German/French
Windows Vista SP1	English/German/French

## MANAGEMENT CONSOLE

COMPONENT	NOTES
Windows XP Professional SP2	English/German/French
Windows XP Home Edition SP2	English/German/French
Windows XP Tablet Edition SP2	English
Macintosh Safari OS X 10.5.x 'Leopard'	English
Windows Vista SP1	English/German/French
JRE 1.5 +	
<b>MINIMUM HARDWARE REQUIREMENTS</b>	
RAM	256 MB
Hard Drive	50 MB of hard disk space for installation
Monitor	VGA Monitor with Windows compatible video drivers
Video card	SVGA Card with 800 x 600 resolution at 256 colors
Processor	Windows: Intel Pentium III or faster
	Solaris: UltraSPARC™-III
	Linux: Intel Pentium III or faster

## FORM DESIGNER

COMPONENT	NOTES
Windows XP Professional SP2	English/German/French
Windows XP Home Edition SP2	English/German/French
Windows XP Tablet Edition SP2	English/German/French
Windows Vista SP1	English/German/French
JRE 1.5 +	Required for publishing
<b>ACROBAT</b>	
Acrobat 7.0.9	
Acrobat 8.x	
<b>BROWSER</b>	
Internet Explorer 6.0 SP2	
Internet Explorer 7.x	
Firefox 2.0.0.11 +	
<b>MINIMUM HARDWARE REQUIREMENTS</b>	
RAM	256 MB
Hard Drive	50 MB of hard disk space for installation
DVD-ROM	Not required if install is run from network share
Monitor	VGA Monitor with Windows compatible video drivers
Video card	SVGA Card with 800 x 600 resolution at 256 colors
Processor	Windows: Intel Pentium III or faster

---

## PROCESS STUDIO

COMPONENT	NOTES
Windows XP Professional SP2	English/German/French
Windows XP Home Edition SP2	English/German/French
Windows XP Tablet Edition SP2	English/German/French
Windows Vista SP1	English/German/French
Macintosh Safari OS X 10.5.x 'Leopard'	English
JRE 1.5 +	
<b>MINIMUM HARDWARE REQUIREMENTS</b>	
RAM	256 MB
Hard Drive	50 MB of hard disk space for installation
DVD-ROM	Not required if install is run from network share
Monitor	VGA Monitor with Windows compatible video drivers
Video card	SVGA Card with 800 x 600 resolution at 256 colors
Processor	Windows: Intel Pentium III or faster

## LIQUIDOFFICE SERVER

The LiquidOffice Server consists of two components:

- Process Server
- Presentation Server

The hardware requirements for both servers are the same. They can be run on the same machine or separate machines. The operating system / software requirements differ, in that Presentation Server can run on BEA WebLogic or IBM WebSphere in addition to the default Tomcat configuration.

COMPONENT	NOTES
<b>OPERATING SYSTEM</b>	
Windows 2003 Server SP1	English/German/French
Red Hat Enterprise Linux 5	Red Hat Enterprise Linux 4 supported for upgrades to LiquidOffice 6.0 from 5.x
Sun Solaris 10	
<b>PRESENTATION SERVER</b>	
Tomcat 6.0	Installed automatically by LiquidOffice. Tomcat is the default Presentation Server for LiquidOffice.
Other Presentation Servers	LiquidOffice can run on a variety of Presentation Servers, such as IBM WebSphere and BEA WebLogic. You should test any deployment on a non-Tomcat Presentation Server before moving your LiquidOffice system into production.
<b>MAIL SERVER</b>	
Mail Server	SMTP support required for LiquidOffice e-mail notification
<b>MINIMUM HARDWARE REQUIREMENTS</b>	
RAM	1G
Hard Drive	100 MB of hard disk space for server installation. Does not include required space for forms and attachments stored on server.
DVD-ROM	Not required on the server itself if install will be run from network share.
Monitor	VGA Monitor with 800 x 600 resolution at 256 colors
Video card	SVGA Card — 256 Colors
Processor	Windows: Intel Pentium III or faster
	Solaris: UltraSPARC™-III
	Linux: Intel Pentium III or faster

---

## INTERNAL DATABASE SERVER

COMPONENT	NOTES
Oracle 10g Release 2	Oracle 10g Release 2 available on Windows, Solaris & Linux
MS SQL Server 2005 SP2	
<b>MINIMUM HARDWARE REQUIREMENTS</b>	
RAM	8 GB
Disk Storage	PREFERRED: Striped across at least 2 physical drives + redundancy (implies 4 physical drives and RAID 1+0)
Processors	MINIMUM: 4 physical processors PREFERRED: 8+ physical processors

## ARCHIVE DATABASE SERVER

COMPONENT	NOTES
Oracle 10g Release 2	Oracle 10g Release 2 available on Windows, Solaris & Linux
MS SQL Server 2005 SP2	
<b>MINIMUM HARDWARE REQUIREMENTS</b>	
RAM	4 GB
Disk Storage	PREFERRED: Striped across at least 2 physical drives + redundancy (implies 4 physical drives and RAID 1+0). IMPORTANT: Provide as much storage space as possible.
Processors	MINIMUM: 2 physical processors PREFERRED: 4+ physical processors

---

## LDAP SERVER

LiquidOffice can run in conjunction with an LDAP Server, but it is not required.

COMPONENT	NOTES
MS Active Directory 2003	
Oracle Internet Directory 10g (10.1.2.0.2)	
SunONE Directory Server 5.2	
Novell eDirectory 8.7.3	
IBM Tivoli Directory Server 6.1	

---

# CHAPTER 3

## Installation of the LiquidOffice Server

### ABOUT THIS CHAPTER

This chapter covers the following topics:

- [Before Installation: Single Server & Cluster on page 32](#)
- [Before Installation: Cluster Only on page 34](#)
- [Installing LiquidOffice Server on page 35](#)
- [Installing the Presentation Server on page 42](#)
- [Creating a WAR file on page 43](#)
- [Change Default Memory Settings on page 44](#)
- [Configure the Key Files on page 45](#)
- [Install MS Outlook Integration on page 47](#)
- [Installing Service Packs on page 47](#)
- [Uninstalling on page 49](#)

### Screen Shot Note

Many of the screen shots in this chapter reflect the installation of LiquidOffice Server in a Windows environment. We have provided textual instructions when needed for installing to other server platforms.

### Silent Install Note

This chapter discusses “standard” installation of the LiquidOffice Server using the normal SETUP program. See [Silent Installation on page 51](#) for information on the Silent Install option.

## BEFORE INSTALLATION: SINGLE SERVER & CLUSTER

You **MUST** understand the following requirements before beginning the installation of LiquidOffice Server for a *single server* or a *cluster* environment.

Platform	Topic	Details
All	System Requirements	See <a href="#">System Requirements on page 23</a> for information on supported hardware and software.
All	Database	<p>Before installing the LiquidOffice Server, you must set up a new database, preferably on a separate machine/cluster. You will also need to set up a username and password with appropriate rights to access this database.</p> <p>For SQL Server, you must be able to log in with SQL Server authentication and have the ability to create tables and views in the default database. (The default database is the one in the URL.)</p> <p>For Oracle, you must have the CONNECT and RESOURCE roles. Additionally, the RESOURCE role must be checked to make sure the CREATE VIEW system privilege is present. This privilege is sometimes not configured in the default install.</p> <p>The database password is encrypted before it is stored. If you change your database password on your database after installing LiquidOffice, see <a href="#">Changing Database Password on page 61</a>.</p> <p>See <a href="#">Internal Database Server on page 29</a> for a list of supported databases.</p>
All	User Rights	The installation should be run as a normal, nonprivileged user. This user must have ownership of target directories for server binaries and shared resources and have read access for installation files.
All	Upgrade Compatibility	<p>LiquidOffice v6.0 can only be installed over LiquidOffice v5.0 or later. If your LiquidOffice version is earlier than v5.0, you must perform an “intermediate upgrade” to v5.02. After this you may upgrade from v5.02 to v6.0.</p> <p>Contact your account representative for assistance with acquiring v5.02 software.</p> <p>See the v5.02 version of the <i>LiquidOffice Install and Admin Guide</i> for instructions on running the install.</p>
All	SETUP files	<p>If you install from a disc, the SETUP program should automatically begin after you insert the disc. If it does not, or if you are installing from a network location, run the appropriate SETUP file located at:</p> <p style="text-align: center;">Disk1\InstData\<i>YourOperatingSystem</i>\VM</p> <p>Each operating system has its own unique subfolder and file in the InstData directory.</p> <ul style="list-style-type: none"> <li>For Windows, the setup file is <b>SETUP.EXE</b>.</li> <li>For Solaris and Linux, navigate to the LiquidOffice setup file directory and run the following command: <b>sh setup.bin</b>.</li> </ul>
Windows	Process Server & Resources locations	<p>The default locations for the Process Server &amp; Resources on Windows:</p> <ul style="list-style-type: none"> <li>Process Server: C:\Program Files\Cardiff\LiquidOffice\xmlserver</li> <li>Process Server Resources: C:\Documents and Settings\All Users\Application Data\Cardiff\LiquidOfficeServer\SharedResources</li> </ul>

Platform	Topic	Details
Solaris & Linux	Process Server & Resources locations	<p><b>NOTE:</b> These directories must be set up on Linux and Solaris with the proper user access granted PRIOR to LiquidOffice installation.</p> <p>The default locations for the Process Server and Resources on Solaris and Linux:</p> <ul style="list-style-type: none"> <li>Process Server: /usr/local/cardiff/liquidoffice/xmlserver</li> <li>Process Server Resources: /liquidoffice/sharedresources</li> </ul>
All	Presentation Server location	<p>The LiquidOffice Presentation Server can be run on a variety of platforms:</p> <ol style="list-style-type: none"> <li>Tomcat (default, provided with LiquidOffice)</li> <li>Other platforms, including BEA WebLogic and IBM WebSphere</li> </ol> <p>The Presentation Server can be installed on the same machine(s) as the LiquidOffice Server or on a separate machine.</p> <p>For additional information, see <a href="#">Installing the Presentation Server on page 42</a>.</p>
Linux	User Rights	Login as a normal, nonprivileged user. <b>DO NOT</b> login as root.
Solaris & Linux	Patches	Install the latest OS patches before installing LiquidOffice Server.
Cluster (All)	Prerequisites	See <a href="#">Before Installation: Cluster Only on page 34</a> before installing to any type of cluster.
All	Upgrade Data Conversion	Data conversion required by the upgrade process will not occur during the installation. When the server is started for the first time after an upgrade, the data conversion process will occur in the background. If a user requests an item that has not yet been converted, that item will be converted immediately and returned to the user. When the conversion process is complete, an entry will be added to the log that data conversion is complete.

---

## BEFORE INSTALLATION: CLUSTER ONLY

You **MUST** understand the following requirements before beginning the installation of LiquidOffice Server for a *cluster* environment only.

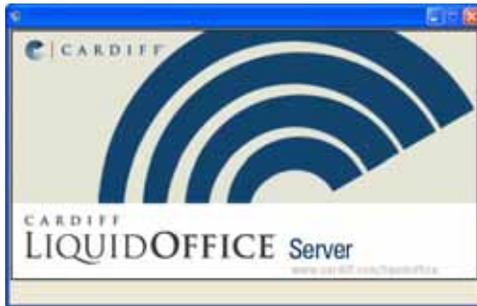
Topic	Details
<b>Load Balancer</b>	Before installing Server in a cluster you <b>MUST</b> have a load balancer installed and configured on your network. Any load balancer can be used. <a href="#">Load Balancing Example on page 67</a> gives an example of a Linux Virtual Server (LVS) load balancer.
<b>User and Group IDs</b>	A user with the same numeric User ID and primary group ID must be used for all installs on all servers in the cluster. This user must have ownership of all directories used for the install (local and NFS).
<b>Shared Drive for Process Server Resource Files</b>	To install LiquidOffice as a cluster, you must install the Process Server Resource files to a shared drive. The path to the Process Server Resource files on the network shared drive will need to be the same for all servers in the cluster.
<b>Special Linux Requirements</b>	<p>Each Linux server in the cluster must have a unique and appropriate hostname configured <b>before installation</b>. This hostname should match an appropriate entry in the DNS server that is used by the cluster nodes for name resolution.</p> <p>Before installing a cluster node on a server, enter the <b>hostname</b> command to make sure the hostname for the server is configured correctly. If this returns an incorrect value of <b>localhost.localdomain</b> then you will need to be logged into the server as root and edit the hostname key in the <b>/etc/sysconfig/network</b> file to match the hostname of the server. For example, the contents of the network file should look something like:</p> <pre>NETWORKING=yes HOSTNAME=locluster1.somecompany.com</pre> <p>This edit to the network file can also be made with the GUI networking configuration program.</p>
<b>Setup Program</b>	The Setup program must be run on <b>ALL</b> servers in the cluster.
<b>Presentation Server</b>	<p>If you are running the LiquidOffice Server on a cluster, we recommend that you strongly consider running the Presentation Server on the same cluster. There is a significant cost associated with building an appropriate cluster to handle only the Presentation Server tasks. This cost includes not only running sufficient servers in each cluster but performing load balancing on both clusters and enforcing “sticky sessions” between the clusters.</p> <p>See <a href="#">Installing the Presentation Server on page 42</a> for more information.</p>

# INSTALLING LIQUIDOFFICE SERVER

For Windows, Solaris, or Linux: Single Server or Cluster

These instructions refer to a full installation of a new version or a point release. For information on installing a Service Pack or a HotFix, see [Installing Service Packs on page 47](#).

1. Comply with the requirements described in [Before Installation: Single Server & Cluster on page 32](#).
2. CLUSTER ONLY: Comply with the additional cluster requirements described in [Before Installation: Cluster Only on page 34](#).
3. CLUSTER ONLY: Make sure all members of the cluster are **OFFLINE** before beginning the installation.
4. Start the LiquidOffice Server installation. If you are installing from disc, insert the disc. If the installation files are available on a network share or the installation does not launch after inserting the disc, see [SETUP files on page 32](#) for additional information.
5. The installation process begins.



6. The **Introduction** dialog appears. Click **Next**.



7. The **Stop LiquidOffice Server Service** dialog appears if you have an older version of LiquidOffice running. Verify that the LiquidOffice Server Service has been stopped.



8. Click **Next**. The **License Agreement** dialog appears.



9. Read through the License Agreement.
10. Select **I accept the terms of the License Agreement** and click **Next**. If you do not accept the terms of this License Agreement, you cannot continue with the install process.
11. The **Important Information** dialog appears.



12. Carefully read the important information and click **Next**.
13. The **Type of Installation** dialog appears.



14. Choose the appropriate installation type:
  - 14.1 **Single-server install**.
  - 14.2 **Cluster install (creates new cluster)**.
  - 14.3 If you already have a LiquidOffice cluster, select **Add this server to an existing cluster**.
15. Click **Next**.

16. The **Choose Location of Process Server** dialog appears.



17. Select the location where you would like to install the LiquidOffice Process Server files.
  - 17.1 **CLUSTER ONLY:** The path should be local to the current machine, not a folder that is shared with other machines.
  - 17.2 The default location for these files is different depending on the operating system. See [Process Server & Resources locations on page 32](#) for additional information.

18. Click **Next**

19. The **Choose Location of Process Server Resources** dialog appears.



20. Select the location of where you would like to install the LiquidOffice Process Server Resource files.
  - 20.1 **CLUSTER ONLY:** The path must be a network share. This path must be the same for all servers in the cluster.

20.2 The default location for these files is different depending on the operating system. See [Process Server & Resources locations on page 32](#) for additional information.

21. Click **Next**.

22. The **User Information** dialog appears.



23. Type your **First Name**, **Last Name**, **Company**, and **License Code** and click **Next**.

24. The **License Summary** dialog appears.



25. Review the License Code information.

25.1 If it is correct, click **Install**.

25.2 If it is incorrect, contact your Sales Representative.

26. LiquidOffice runs through a portion of the install process. When this portion has been completed, the **Host & Clustering Identity** dialog appears.



27. In the **Host** field, type the fully-qualified domain name of the server as accessed by end users in a URL. In a single-server scenario, this is the host name of the machine to which the server is being installed, or it may be a DNS alias. If a proxy server is being used, this is the host name of the proxy server. If a cluster server is being used, this is the name of the server as accessed by end users.

28. Select **Single Server**, **Proxy Server** or **Cluster Server**.

28.1 If you select **Single Server**, the specified host name refers to the server being configured. This server is not part of a cluster, and is not otherwise accessed via a proxy server.

28.2 If you select **Proxy Server**, the specified host name refers to a proxy server which is used to access the server being configured.

28.3 If you select **Cluster Server**, type the **Multi-cast Port**. This is the multi-cast listener port number that the cluster nodes use to communicate with one another. This port number must be the same for each server on the cluster and distinct for each cluster on the network.

29. Click **Next**.

30. The **Web Server Ports** dialog appears.  
WINDOWS & SOLARIS:



LINUX:



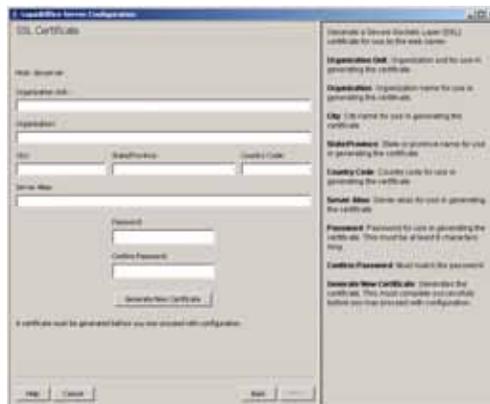
31. Select **Enable HTTP** and type the appropriate **Port** if you would like to enable support for an unsecured connection using HTTP. The standard HTTP port is 80.
32. Select **Enable HTTPS** and type the appropriate **Port** if you would like to enable support for a secured connection using HTTP over SSL (HTTPS). The standard HTTPS port is 443.

**NOTE:** If both HTTP and HTTPS protocols are enabled, each must use a different port.

33. **LINUX ONLY:** Check the **Redirect to Port** box(es) and type the applicable redirect port number(s). For example, if the port is 8080, you would specify port 80 in the URL but the server will actually listen to port 8080.

Non-root users cannot access ports less than or equal to 1024. If the HTTP Port Number is 80, then the default for the HTTP Redirect Port Number is 8080. If the SSL Port Number is 443, then the default for the SSL Redirect Port Number is 8443.

34. Click **Next**.
35. If **HTTPS** is enabled, the **SSL Certificate** dialog appears.



36. Type all of the following:

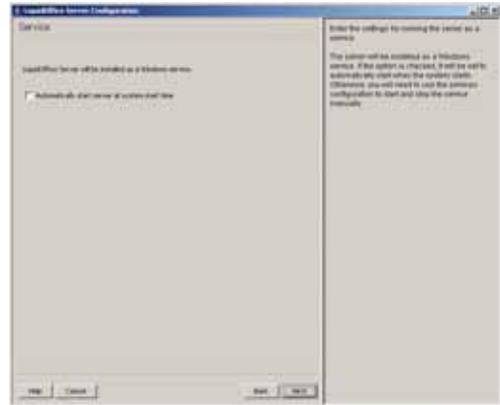
- **Organization Unit:** Organization unit for use in generating the certificate.
- **Organization:** Organization name for use in generating the certificate.
- **City:** City name for use in generating the certificate.
- **State/Province:** State or province name for use in generating the certificate.
- **Country Code:** Country code for use in generating the certificate.
- **Server Alias:** Server Alias for use in generating the certificate. The Server Alias defaults to the IP address of your machine. It is recommended that you leave this as it appears.
- **Password:** Password for use in generating the certificate. This must be at least 6 characters long. You will need to remember this password so the Certificate Authority can create a valid certificate.
- **Confirm Password:** Must match the password.

37. Click **Generate New Certificate**. This generates the certificate. This must complete successfully before you may proceed with configuration. If an older keystore file is found, the configurator will prompt you for the keystore password. The older keystore will NOT be removed. If you want to generate a new certificate, delete the existing keystore and click **Generate New Certificate** again.

**TIP:** If you have any problems creating this certificate, you can try executing the batch file (sslConfig.bat or sslConfig.sh) located at <server>\jre\bin.

38. Click **Next**.

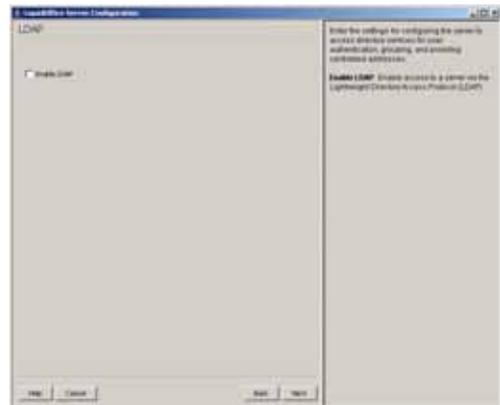
39. WINDOWS ONLY: The **Service** dialog appears.



39.1 Check the **Automatically start server at system start time** box if you would like the LiquidOffice Server to automatically start when the system starts. Otherwise, you will need to start and stop the LiquidOffice Server service manually.

39.2 Click **Next**.

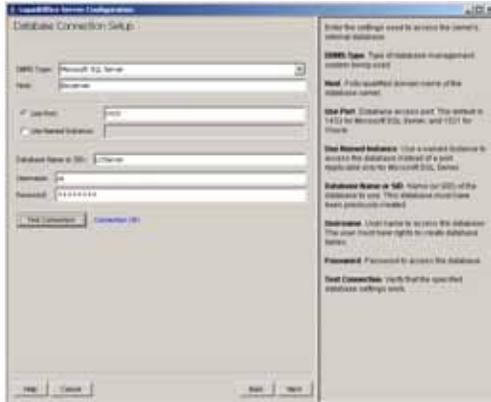
40. The **LDAP** dialog appears.



41. Check **Enable LDAP** if you would like to enable access to a server via the Lightweight Directory Access Protocol (LDAP). See the *LiquidOffice Management Console* help for additional information on configuring LiquidOffice with an LDAP server after the LiquidOffice Server is installed.

42. Click **Next**.

43. The **Database Connection Setup** dialog appears.



44. Type the following settings used to access the server's internal database:

**NOTE:** See [Internal Database Server on page 29](#) for the software and minimum hardware requirements for this server.

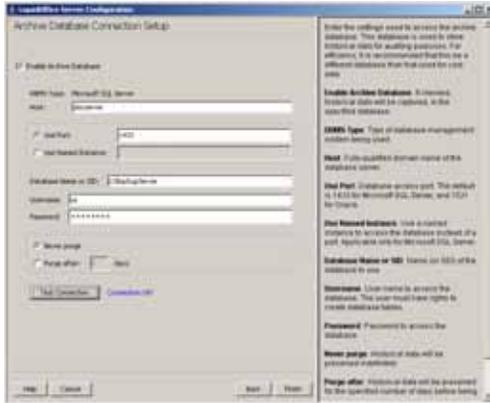
- **DBMS Type:** Type of Database Management System being used.
- **Host:** Fully-qualified domain name of the database server.
- **Use Port:** Database access port. The default is 1433 for Microsoft SQL Server and 1521 for Oracle.
- **Use Named Instance:** Use a named instance to access the database instead of a port. Applicable only for Microsoft SQL Server.
- **Database Name or SID:** Name (or SID) of the database to use. This database must have been previously created.
- **Username:** User name to access the database. The user must have rights to create database tables.
- **Password:** Password to access the database.

**NOTE:** The database password is encrypted before it is stored. If you change your database password on your database after installing LiquidOffice, see [Changing Database Password on page 61](#).

45. Click **Test Connection**. Verify that the specified database settings work.

46. Click **Next**.

47. The **Archive Database Connection Setup** dialog appears.



48. Type the following settings used to access the archive database. This database is used to generate **Reports** and store data generated in **Reports**. (See the LiquidOffice Management Console help for additional information about Reports.)

**IMPORTANT!** For efficiency, it is recommended that this be a different database than that used for core data. See [Archive Database Server on page 29](#) for the software and minimum hardware requirements for this server.

- **Enable Archive Database:** Check this option if you would like historical data to be captured in the specified database.
- **DBMS Type:** Type of Database Management System being used.
- **Host:** Fully-qualified domain name of the database server.
- **Use Port:** Database access port. The default is 1433 for Microsoft SQL Server and 1521 for Oracle.
- **Use Named Instance:** Use a named instance to access the database instead of a port. Applicable only for Microsoft SQL Server.

- **Database Name or SID:** Name (or SID) of the database to use. This database must have been previously created.
- **Username:** User name to access the database. The user must have rights to create database tables.
- **Password:** Password to access the database.
- **Never purge:** Historical data will be preserved indefinitely.
- **Purge after:** Historical data will be preserved for the specified number of days before being deleted.

49. Click **Test Connection**. Verify that the specified database settings work.

50. Click **Next**.

51. The **Configuration Complete** dialog appears.



52. Click **OK**.

53. The **Install Complete** dialog appears.



54. Click **Done**.

55. SOLARIS ONLY:

55.1 Log out.

55.2 Log back in as **root**.

55.3 Run the **los\_post.sh** script located in the **xmlserver** directory.

---

56. LINUX ONLY:

56.1 Log out.

56.2 Log back in as **root**.

56.3 Run the **los\_post.sh** script located in the `xmlserver` directory.

56.4 Run the **service iptables save** command.

57. CLUSTER ONLY:

57.1 Repeat the installation on each individual server in the cluster.

57.2 After the installation program has been completed, you must restart every machine in the cluster.

58. To set up the LiquidOffice Presentation Server, see [page 42](#).

59. See [Configure the Key Files on page 45](#) if you installed LiquidOffice with SSL support.

60. See [Install MS Outlook Integration on page 47](#) if you want to take advantage of this option.

61. See [page 57](#) for instructions on taking your Server from test/development status to production. You should **RIGOROUSLY** test your Server before moving to production status.

## INSTALLING THE PRESENTATION SERVER

By default, the LiquidOffice Presentation Server is already installed on the same machine(s) as the LiquidOffice Process Server using Tomcat. In many situations, this configuration is adequate and you do not need to perform any additional steps.

If the default installation does not meet your needs, the Presentation Server may also be installed on a separate application server, such as Tomcat, BEA WebLogic, or IBM WebSphere.

### Before Installation: Important Information

- It is **NOT** recommended that you run more than one instance of Tomcat on the same machine.
- If you are installing the Presentation Server on the same machine as the Process Server, do **NOT** uninstall or stop the default version of Tomcat automatically installed with LiquidOffice. This installation of Tomcat must be available as a “target”.
- If you are installing the Presentation Server on a separate machine, check that the Presentation Server machine meets the System Requirements (see [page 28](#)).
- Before installing the Presentation Server create ([page 43](#)) a WAR file.
- If you have installed LiquidOffice Server to a cluster, we recommend that you do **NOT** “split” the Presentation Server onto a separate cluster. There is a significant cost associated with building an appropriate cluster to handle only the Presentation Server tasks. This cost includes not only running sufficient servers in each cluster but performing load balancing on both clusters and enforcing “sticky sessions” between the clusters.

---

## Creating a WAR file

**IMPORTANT!** The Java Development Kit (JDK) must be installed prior to creating the WAR file.

1. Go to the LiquidOffice Process Server \SharedResources\presentation directory. The full (default) Windows path is:

```
Documents and Settings \ All Users \
Application Data \ Cardiff \
LiquidOfficeServer \ SharedResources \
presentation
```

2. Copy all of the files in this directory into a directory on your local machine.
3. Go to the WEB-INF directory.
4. Open the **web.xml** file.
5. Change the LOXmlHost setting to point to the IP address of the Process Server:

- Example:

```
<param-name>LOXmlHost</param-name> <param-
value>localhost</param-value>
```

- Change To:

```
<param-name>LOXmlHost</param-name> <param-
value>192.168.1.5</param-value>
```

6. Change the LOXmlPort setting to the port number set on the Process Server:

- Example:

```
<param-name>LOXmlPort</param-name> <param-
value>8080</param-value>
```

- Change To:

```
<param-name>LOXmlPort</param-name> <param-
value>80</param-value>
```

7. Compile a **presentation.war** file using the jar utility from the Java Development Kit (JDK).

- Example: If you are at the top level of the directory structure in which you are assembling the WAR contents, you could use this command:

```
jar cvf presentation.war
```

---

## CHANGE DEFAULT MEMORY SETTINGS

For server instances that will be run in a busy production environment it is a good idea to raise the amount of memory available to the LiquidOffice Server. A reasonable estimation is any server expecting more than 50 concurrent users. If a server is expected to operate under this type of workload it is a good idea to make these changes shortly after completing the installation.

## Windows/Solaris/Linux

To modify the **los\_startup.bat** or **los\_startup.sh** file, change the **MAX\_MEMORY** and **MIN\_MEMORY** lines to **1024m** (1 gigabyte of memory):

```
set MAX_MEMORY=1024m
```

```
set MIN_MEMORY=1024m
```

Remove the explicit definition of the max and min new size from the **JAVA\_OPTS** line by changing it to the following:

```
set JAVA_OPTS=-Xms%MIN_MEMORY% -Xmx%MAX_MEMORY%
```

## Windows Only

For the **los\_ntservice.bat** file (associated with the Windows Service to start and stop the LiquidOffice Server), modify the line that starts with **?set JAVA\_OPTS=?** to the following:

```
set JAVA_OPTS="-Xmx1024m;-Xms1024m;"
```

After this modification, open a command line window and navigate to the directory where **los\_ntservice.bat** is located. Rebuild the windows service by executing the batch file with the remove and then the install option:

```
C:\Program_Files\Cardiff\LiquidOffice\xmlserver> los_ntservice.bat remove
```

The service 'LOServer' has been removed

```
C:\Program_Files\Cardiff\LiquidOffice\xmlserver> los_ntservice.bat install
```

The service 'LOServer' has been installed.

---

## CONFIGURE THE KEY FILES

If you have installed LiquidOffice Server with SSL support, you must configure the Certification Key File.

There are 4 steps in this process:

[Step 1: Create a CSR File](#)

[Step 2: Request a Signed Certificate](#)

[Step 3: Copy Certificate File to Server and Check](#)

[Step 4: Import Certificate File](#)

### Step 1: Create a CSR File

The process of creating a CSR file is different for Windows and Solaris/Linux environments.

#### Creating a CSR File in Windows

1. Edit the `<ServerDir>\jre\bin\ssl_CertReq.bat` file. The file has been commented so you know what items to change.
2. Execute this batch file by double-clicking on its icon or by typing the following command line:  
`<ServerDir>\jre\bin\ssl_ConfigReq.bat`
3. The batch will ask for a password. This should be the same one used when you configured the SSL support option during the LiquidOffice Server install.
4. This will create the .csr file specified in the `ssl_CertReq.bat` file by the `CERT_FILE` environment variable.

#### Creating a CSR File in Solaris and Linux

1. Change the file attributes of the `<ServerDir>/jre/bin/ssl_CertReq.sh` file so it can be executed by typing the command:  
`chmod 754 <ServerDir>/jre/bin/ssl_CertReq.sh`
2. Edit the `<ServerDir>/jre/bin/ssl_CertReq.sh` file as directed in the file. The file has been commented out so users know what items to change.
3. Execute the batch file by typing the following command:  
`cd <ServerDir>/jre/bin/  
sh ./ssl_CertReq.sh`
4. The batch will ask for a password, this should be the same one that users typed when they configured the SSL support option during LOS install.
5. This will create the .csr file specified in the `ssl_CertReq.bat` file by the `CERT_FILE` environment variable.

---

## Step 2: Request a Signed Certificate

1. Send the .csr file (or CERT\_FILE) to a Certificate Authority to request a signed certificate. Certificate Authorities include but are not limited to [www.verisign.com](http://www.verisign.com), [www.thawte.com](http://www.thawte.com), and [www.entrust.com](http://www.entrust.com).
2. The Certificate Authority will send you a certificate file (.cer).

## Step 3: Copy Certificate File to Server and Check

1. Copy the certificate file (.cer) to your server and check that the certificate is valid. To do this, open a command prompt window and Go to the jre/bin folder in the LiquidOffice Server directory. For example:

```
cd "C:\Program  
Files\cardiff\liquidoffice\server\jre\bin"
```

or

```
cd /usr/local/cardiff/liquidoffice/server/jre/bin
```

2. Type the following command:

```
keytool.exe -printcert -file <name_of_file.cer>
```

When asked for a password, enter the same one that you inserted during install to generate the SSL key certificate.

3. Make sure that the displayed certificate fingerprint(s) match the expected ones. Below is an example of what you should see:

```
Owner: CN=ll, OU=ll, O=ll, L=ll, ST=ll, C=ll
```

```
Issuer: OU=ll, OU=ll, O=ll
```

```
Serial number: 6187f00
```

```
Valid from: Thu Jul 25 17:00:00 PDT 2002 until: Fri Aug 09  
16:59:59 PDT 2002
```

```
Certificate fingerprints:
```

```
MD5:SE:3D:55:CD:71:E9:91:4A:18:F0:74:DD:C8:D8:66:96
```

```
SHA1:5D:C2:66:A4:07:1C:53:D1:42:1F:9E:30:7C:8F:2E:B8:32:  
1D:E4:7A
```

If you get any errors, contact the Certificate Authority for further instructions.

## Step 4: Import Certificate File

1. Now that you have checked the certificate file, you can import it using the keytool utility. To do this, type the following command at the command prompt:

```
keytool -import -v -trustcacerts -file  
<name_of_file.cert.cer> -keystore  
<Tomcat_Dir\conf\loskeystore>-alias  
<ALIAS_NAME>
```

**NOTE:** Replace <name\_of\_file.cert.cer> with the path and name of the new certificate file. Replace <ALIAS\_NAME> with the server alias that you used on the SSL Certificate Configuration window during installation.

2. When asked for a password, type the same one that you inserted during install to generate the SSL key certificate.
3. When asked, "Trust this certificate? [no]:", type "y" or "yes".
4. For more information, please refer to the Certificate Authority's site for support or documentation.

---

## INSTALL MS OUTLOOK INTEGRATION

This step is optional. MS Outlook integration allows users to access LiquidOffice forms from MS Outlook.

1. Make sure you have the appropriate software. Outlook Integration requires:
  - Windows XP
  - Outlook 2003
2. Go to the **extras/looutlook** directory of your LiquidOffice Server after installation. There are two files in the **looutlook** directory.
  - <http://MyLiquidOfficeServer/extras/looutlook/config.ini>
  - <http://MyLiquidOfficeServer/extras/looutlook/LOutlook.msi>
3. The config.ini and LOutlook.msi files must both be in the same directory on a network share.
4. Open the config.ini file and edit **ServerURL:** **<http://myserver.mydomain.com/>** to the appropriate URL(s) of the LiquidOffice server(s) that will integrate with MS Outlook.
5. Open the LOutlook.msi file to run the installation after the config.ini file has been properly edited. An administrator has the option to allow clients to install via network installation or to push the install to a group of clients using group policies.

## INSTALLING SERVICE PACKS

See the following sections for detailed information on installing Service Packs to different operating systems and platforms:

- [All Cluster Updates](#)
- [Windows](#)
- [Solaris](#)
- [Linux](#)
- [WebLogic](#)
- [WebSphere](#)

### All Cluster Updates

The following requirements must be met when installing a Service Pack to a cluster, regardless of the operating system/platform:

1. All members of the server cluster must be offline before the service pack installer is run.
2. The LiquidOffice Database must be accessible when installing to a server cluster.
3. See your Service Pack documentation concerning which nodes require installation.

### Windows

1. Double-click the **setup.exe** file in the **<cd-root>\Windows** directory on the install disc or in the directory to which the Service Pack was downloaded.
2. The Service Pack will be installed. Follow any instructions from install in regard to restarting the server(s).

---

## Solaris

1. Install the latest Solaris OS patches.
2. Open a terminal window.
3. Go to the `<cd-root>/Solaris` directory of the disc or the directory to which the update was downloaded.
4. Type `sh setup.bin` to launch the install program.
5. The update will be installed.

## Linux

1. Install the latest Linux OS patches.
2. Open a terminal window.
3. Go to the `<cd-root>/Linux` directory of the disc or the directory to which the update was downloaded.
4. Type `sh setup.bin` to launch the install program.
5. The update will be installed.

## WebLogic

Before installing a Service Pack, you must remove the current deployment.

1. Login to the BEA WebLogic Administration Console.
2. In the upper left hand corner click the **Lock & Edit** button under the **Change Center** heading.
3. Click **Deployments** in the left hand navigation bar.
4. In the right hand window select **presentation** (or the name you applied to the deployment) and click the **Delete** button.
5. When the **Delete Application Assistant** screen appears in the right window, click **Yes**.
6. At the next screen in the upper left hand corner click the **Activate Changes** button under the **Change Center** heading.
7. The application will be removed.
8. Once you have installed the Service Pack, you will need to redeploy the Presentation Server WAR file as described on [page 43](#).

## WebSphere

Before installing a Service Pack, you must remove the current deployment.

1. Login to the WebSphere Administrative Console.
2. Click on **Applications** in the left hand navigation menu, then click on **Enterprise Applications**.
3. Mark the checkbox to select the **presentation\_war** application (or the name you applied to the deployment).
4. Click **Stop**.
5. Mark the checkbox to select the **presentation\_war** application again.
6. Click **Uninstall**.
7. At the **Uninstall Application** page, click **OK**. It may take a moment for the uninstall to complete.
8. Once the uninstall is complete, click **Save** in the **Messages** box at the top of the page.
9. Close the Administrative Console.
10. Once you have installed the Service Pack, you will need to redeploy the Presentation Server WAR file as described on [page 43](#).

---

## UNINSTALLING

This section covers the following topics:

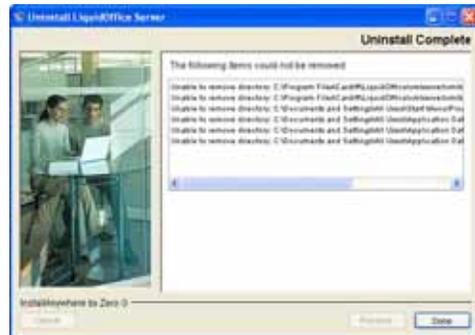
- [Uninstalling on Windows](#)
- [Uninstalling on Solaris or Linux](#)

## Uninstalling on Windows

1. Stop the LiquidOffice Server Service.
2. On the Control Panel > **Add/Remove Programs** dialog, select **Cardiff LiquidOffice Server**.
3. Click the **Change/Remove** button.
4. The **Uninstall LiquidOffice Server** dialog appears.



5. Click **Uninstall**. The LiquidOffice Server uninstall begins. The uninstall may take a few moments.
6. The **Uninstall Complete** dialog appears.



7. Any items not removed will be listed on this dialog.
8. Click **Done**.

---

## Uninstalling on Solaris or Linux

1. Login as ROOT.
2. Stop the LiquidOffice Server.
3. Run the **los\_post\_remove.sh** script.
4. At the Command Line, type:

```
cd <server_home>/uninstall
```

- 4.1 Then type:

```
sh uninstall
```

5. The **Uninstall LiquidOffice Server** dialog appears.
6. Click **Uninstall**. The LiquidOffice Server uninstall begins. The uninstall may take a few moments.
7. The **Uninstall Complete** dialog appears. Any items not removed will be listed on this dialog.
8. Click **Done**.

---

# CHAPTER 4

## Silent Installation

### ABOUT THIS CHAPTER

This section covers the following topics:

- [What is a Silent Install?](#)
- [Silent Install of LiquidOffice Form Designer on page 52](#)
- [Silent Install of the LiquidOffice Server on page 53](#)
- [Silently Installing Service Packs and HotFixes on page 54](#)
- [Silent Uninstallation on page 55](#)
- [Moving Server to Production on page 55](#)

### WHAT IS A SILENT INSTALL?

A Silent Install is controlled by a response file. During the installation, no user input is required. All settings will be configured based on the contents of the response file.

---

## SILENT INSTALL OF LIQUIDOFFICE FORM DESIGNER

To perform a silent install you will first need to create a response file by running through the installation process manually. The response file must then be placed on the machine where the silent install will be run.

**NOTE:** JRE 1.5 + must be installed.

### Creating a Response File

1. Open the Command Prompt and type the location of the SETUP file in the Bin directory on the LiquidOffice disc, followed by the -r command

```
EXAMPLE:  
Bin\setup.exe -r
```

2. You will be asked to run through the setup manually and the response file will be created once the manual setup is complete.
3. The response file, SETUP.ISS, will be located in the Windows directory (C:\Windows\setup.iss) for Windows XP or in the WINNT (C:\WINNT\setup.iss) directory for Windows 2000.

### Launching a Silent Install

To run the response file and launch a silent install:

1. Place the setup.iss file in a custom directory on the machine you want to run a silent install on.

**EXAMPLE:** C:\temp\setup.iss

2. Open the Command Prompt and type the location of the SETUP file on the LiquidOffice disc, followed by the -r and the -f1 command. The -f1 command should be followed by the location of the setup.iss file.

```
EXAMPLE: Bin\setup.exe -s -f1  
C:\temp\setup.iss
```

3. To add a log file, add f2C:\temp\setup.log to the above command.

```
Bin\setup.exe -s -f1  
C:\temp\setup.iss -f2  
C:\temp\setup.log
```

4. The above command will place a log file in the C:\temp directory. If the Result Code in the log file is 0 then the install was successful. If the result code in the log file is a negative number then the install failed. For more information go to: <http://support.installshield.com/>

---

## SILENT INSTALL OF THE LIQUIDOFFICE SERVER

See these sections before proceeding with a Silent Install:

- [Before Installation: Single Server & Cluster on page 32](#)
- [Installing the Presentation Server on page 42](#)

In addition to using the installer, you can install the LiquidOffice Server in silent mode.

- [Step 1: Edit the install.properties File](#)
- [Step 2: Run the Server Silent Install on page 53](#)
- [Step 3: Completing Installation on page 54](#)

### Step 1: Edit the install.properties File

1. You must log in as a user with rights to create a new directory and add a file to the new directory.
2. Open the install.properties file located in the appropriate directory of the LiquidOffice Server CD\`Disk1\InstData`:
  - `\Windows\VM\silent\install.properties`
  - `\Solaris\VM\silent\install.properties`
  - `\Linux\VM\silent\install.properties`
3. Copy the install.properties file into the following directory on the server:
  - `WINDOWS: C:/temp/`
  - `LINUX / SOLARIS: /tmp/cardiff`

4. Open the file and edit the property values. Each install.properties file contains information on the available settings and how they can be used, including examples where appropriate.

**IMPORTANT!** The first two settings of the install.properties file (`INSTALLER_UI` and `InstallAnywhere.installer.interface`) will be pre-filled to allow the setup to run in silent mode. **Do not change these settings.**

### Step 2: Run the Server Silent Install

Running the silent install requires different commands depending on your platform:

- [Windows](#)
- [Solaris and Linux](#)

#### Windows

1. Open a command prompt.
2. Type:
  - the location of the setup.exe file in the `Disk1\InstData\Windows\VM\` directory
  - followed by the `-f` command
  - followed by the location of the install.properties file in the `C:\temp\` directory
  - Example:

```
\Disk1\InstData\Windows\VM\setup.exe  
 (space)-f(space)  
 C:\temp\install.properties
```

#### Solaris and Linux

Type the following command:

```
sh /<setup directory path>/setup.bin  
 -f /tmp/cardiff/install.properties
```

---

## Step 3: Completing Installation

See the following topics for information on tasks that may need to be completed after a silent install:

1. **Windows:** After the installation program has been completed, you must restart the machine. If you have installed to a cluster, you must restart all the machines in that cluster.
2. **Solaris:**
  - 2.1 Log out.
  - 2.2 Log back in as **root**.
  - 2.3 Run the **los\_post.sh** script located in the `xmlserver` directory.
3. **Linux:**
  - 3.1 Log out.
  - 3.2 Log back in as **root**.
  - 3.3 Run the **los\_post.sh** script located in the `xmlserver` directory.
  - 3.4 Run the **service iptables save** command.
4. See [page 47](#) if you need to install MS Outlook Integration.
5. See [page 45](#) if you have installed LiquidOffice Server with SSL support.

## SILENTLY INSTALLING SERVICE PACKS AND HOTFIXES

Running the silent install for a service pack or hot fix, rather than a full version or point release, requires different commands depending on your platform:

- [Windows](#)
- [Solaris and Linux](#)

### Windows

1. Open a command prompt.
2. Type the following command:

```
setup.exe -i silent
```

### Solaris and Linux

Once you have edited the property values of the file, you can run the setup by typing the following command:

```
sh ./setup.bin -i silent
```

---

## SILENT UNINSTALLATION

The Silent Install protocol can also be used to uninstall LiquidOffice Server.

### Silent Uninstallation on Solaris and Linux

From the /<server\_home>/uninstall directory, type:

```
sh uninstall silent
```

## MOVING SERVER TO PRODUCTION

See [Starting the LiquidOffice Server on page 57](#) for instructions on making your server ready to handle a production environment.



---

# CHAPTER 5

## Operating the LiquidOffice Server

### ABOUT THIS CHAPTER

This chapter covers the following topics:

- [Starting the LiquidOffice Server](#)
- [Starting the LiquidOffice Server on page 57](#)
- [Stopping the Server on page 59](#)
- [Accessing the Server on page 60](#)
- [Managing the Server on page 60](#)
- [Changing Database Password on page 61](#)

### STARTING THE LIQUIDOFFICE SERVER

The instructions for starting the LiquidOffice Server vary by platform:

#### Windows

**TIP:** If you check the **Automatically start server at system start time** box during the LiquidOffice Server installation process (Windows Only), the following steps may not be necessary.

1. Browse to the xmlserver directory and run the **los\_startup.bat** file.
  - The default location for this file is C:\Program Files\Cardiff\LiquidOffice\xmlserver.
  - The file can also be executed via a command line.
2. Go to **Start — All Programs — Administrative Tools — Services**.
3. Locate LiquidOffice Server in the list and click the **Start** button.

---

## Solaris

The user executing these commands must not be using the default shell (/bin/sh) as this will cause the server to stop upon exiting the terminal. The user must use a shell that provides for background processes, such as tcsh, bash, ksh, and others.

1. Execute the startup files directly:
  - `sh /etc/init.d/lfserver start`
2. As the user who performed the install, execute the startup script from the xmlserver directory.
  - The script is `sh ./los_startup.sh start`.
  - This script is usually located at /usr/local/cardiff/liquidoffice/xmlserver.

## Linux

1. Use the service command from anywhere.
  - Recommended method: `service lfserver start`
2. Execute the startup files directly:
  - `sh /etc/init.d/lfserver start`
3. As the user who performed the install, execute the startup script from the xmlserver directory:
  - This script is `sh ./los_startup.sh start`
  - This script is usually located at /usr/local/cardiff/liquidoffice/xmlserver)

---

## STOPPING THE SERVER

If you restart your machine, the LiquidOffice Server will automatically be loaded at startup and, similarly, the Server will stop when the machine is shutdown.

### Windows

1. Browse to the `xmlserver` directory and double-click the `los_shutdown.bat` file.
  - Alternatively, the command can be executed from a command line.
2. Go to **Start — All Programs — Administrative Tools — Services**.
3. Locate LiquidOffice Server in the list and click the **Stop** button.

### Solaris

The user executing these commands must not be using the default shell (`/bin/sh`) as this will cause the server to stop upon exiting the terminal. The user must use a shell that provides for background processes, such as `tcsh`, `bash`, `ksh`, and others.

1. Execute the shutdown files directly:
  - `sh /etc/init.d/lfserver stop`
2. As the user who performed the install, execute the startup script from the `xmlserver` directory.
  - The script is `los_shutdown.sh`.
  - This script is usually located at `/usr/local/cardiff/liquidoffice/xmlserver`

### Linux

1. Use the service command from anywhere.
  - Recommended method: `service lfserver stop`
2. Execute the shutdown files directly:
  - `sh /etc/init.d/lfserver stop`
3. As the user who performed the install, execute the shutdown script from the `xmlserver` directory:
  - This script is `sh ./los_shutdown.sh`
  - This script is usually located at `/usr/local/cardiff/liquidoffice/xmlserver`

---

## ACCESSING THE SERVER

1. Open a browser window.
2. Type a properly formatted URL in the address line.
  - 2.1 If your Presentation Server is hosted on a separate machine from the Process Server, use the URL for the Presentation Server.
3. You will be prompted for login information.

### Logging In To Cluster

When logging into a cluster, users should go to the Fully Qualified Domain Name of the cluster. Logging in at the abbreviated host name (`http://venus`) instead of the Fully Qualified Domain Name (`http://venus.yourcompany.com`) of the cluster may cause the user to see an error message.

## MANAGING THE SERVER

The LiquidOffice Management Console (LOMC) is the primary tool for managing the LiquidOffice Server. The Management Console allows you to perform a variety of administrative tasks based on the roles assigned to you. Only users assigned one or more of the following roles can access the Management Console:

- Administrator
- Operator
- Form Publisher
- Process Administrator
- Process Approver
- Process Publisher
- Relationship Administrator
- Report Publisher

### Accessing Management Console

1. Login to the LiquidOffice Server.
2. Click the **Administration** icon in the upper-right corner of the page.
  - 2.1 If you do not have Java Web Start installed on your computer, you will be prompted to download and install it. Once Java Web Start is downloaded and installed, Sign Off of the LiquidOffice Server and Sign In again to access the LiquidOffice Management Console.
3. Java Web Start launches the Management Console. You will be prompted to login with your LiquidOffice Server path, Username, and Password. Type or select this information and click **OK**.

### Management Console Information

The Management Console online help file contains information on managing the LiquidOffice Server.

---

## CHANGING DATABASE PASSWORD

The LiquidOffice database password is encrypted before it is stored. If you change your database password on your database after installing LiquidOffice, you must deploy the **changeinternaldbpass.jsp** file. For example, in Windows this directory is located at:

```
[SharedResources] \ process \ WEB-INF \  
config \ util
```



---

# CHAPTER 6

## Technical Resources

### ABOUT THIS CHAPTER

You have many options for getting information about LiquidOffice. This chapter describes the following options for technical resources concerning LiquidOffice:

- Documentation
- Online Help
- Basic Tutorial
- Web site
- Technical Support

### DOCUMENTATION

We update the user documentation on a regular basis. To download the latest revision of a user guide, go to <https://customers.autonomy.com>.

### ONLINE HELP

You can access the LiquidOffice Help system in LiquidOffice Form Designer, LiquidOffice Process Designer or the LiquidOffice Management Console by pressing the F1 key or clicking an option from the **Help** menu. You can access the LiquidOffice Help system in the LiquidOffice Server by clicking the **Help** button  on the right side of the Web Desktop. These Help systems include a Table of Contents, an Index, and a Search/Find feature.

### BASIC TUTORIAL

The LiquidOffice Basic Tutorial provides an interactive environment for the user to learn the basic concepts behind LiquidOffice. In LiquidOffice Form Designer, you can access the interactive, online tutorial by selecting **Help** — **Basic Tutorial**. On the LiquidOffice Server, you can access the tutorial by clicking on the **Help** button. Click the **Show** link and select the **LiquidOffice Basic Tutorial** link in the Table of Contents.

The Online Tutorial requires the Flash Player™. This can be downloaded for free from the following website: <http://www.adobe.com/downloads>.

---

## WEB SITE

The Customer Support web site, <https://customers.cardiff.com>, provides a wealth of information about LiquidOffice. The site includes:

- News updates;
- A list of Frequently Asked Questions (FAQs) that you can search for solutions to common problems;
- A library of documents in PDF format;
- Free downloads of Service Packs, patches, and other useful software;
- A glossary of terms you may encounter when working with your system;
- White Papers explaining the use of LiquidOffice in real-world scenarios;
- Automatic e-mail contact to Technical Support and Sales departments.

The **Help** menu in LiquidOffice Form and Process Studio provides a direct link to the web site.

## TECHNICAL SUPPORT

If you have a question about LiquidOffice, you should first look in the LiquidOffice user documentation or check the web site for answers. Frequently Asked Questions (FAQs) are available on the Web site's Technical Support page. If you still can't find answers to your questions, contact Technical Support team.

We are dedicated to providing the highest quality technical support to registered LiquidOffice customers.

### The Annual Support and Maintenance Plan for LiquidOffice

The Annual Support Plan offers the following benefits:

- Unlimited technical support via email, telephone, and fax during normal business hours
- Service packs for the product at no charge
- Point releases and major upgrades for the product at no charge

Point releases and major upgrades are only available to customers with an Annual Support and Maintenance Plan. Express shipping and handling is available for new point releases and major upgrades for a nominal fee. Contact your sales representative for more information.

---

## Before You Contact Technical Support

Before you call Technical Support, please have the following available:

- The version and build number of LiquidOffice that you are running. To locate the version and build number of LiquidOffice Form Designer and Process Studio, select **About** from the **Help** menu. To locate the version and build number of LiquidOffice Server, click the **About** icon on the Web Desktop or the **About LiquidOffice** link in the **Help** menu of the LiquidOffice Management Console. You can also find the version number by selecting **Server** — **System Info** from the sidebar in the Management Console.
- The registration code of your software. To locate the license number on the LiquidOffice Server, launch the LiquidOffice Management Console and select **Server** — **System Info** from the sidebar.

Click on the **License Information** button .

**NOTE:** You can launch the Management Console by clicking on the Administration button  on the Web Desktop or by selecting the LiquidOffice Management Console shortcut from your local machine if the Management Console has been installed locally.

- The type of hardware you are using;
- The amount of available memory (RAM) and disk space on your system;
- A description of what you were doing when the problem occurred;
- The exact wording of any messages that appeared on your screen;
- Any other details pertinent to your problem.
- Contact the office appropriate to your location.

### Americas

Email: [support@cardiff.com](mailto:support@cardiff.com)

Telephone:

877.483.7489

403.294.1107 (Canada direct)

Hours: 07:00 to 18:00 MST (GMT-7)

### European and Worldwide Support

Email: [tsp-europe@autonomy.com](mailto:tsp-europe@autonomy.com)

Telephone:

00.800.4837.4890 (UK, Germany, Spain, Netherlands, France)

1-403-294-1107 (other countries)

Hours: 09:00 to 17:00 (GMT+1)



---

# Appendix A

## Load Balancing Example

### ABOUT APPENDIX A

The following example will walk you through the basic steps necessary to get LiquidOffice up and running in a clustered environment with a freely available software load balancer (LVS) running on Linux.

This example is not totally comprehensive and does not eliminate single points of failure. We encourage you to go to the Linux Virtual Server and Ultramonkey Web sites to learn more about different methods that can be used to provide more complex and redundant load balancing solutions.

#### More Information on LVS

For more information on how to download, install and run LVS, go to:

[http://www.ultramonkey.org/papers/lvs\\_tutorial](http://www.ultramonkey.org/papers/lvs_tutorial)

### PREREQUISITES

For this example it is assumed that the following are up and running:

- A private network address range (we'll use 192.168.1.0/24 for this example) is needed for the LiquidOffice servers and required network services (database server, file share)
- A public network address range (we'll use 192.168.2.0/24 for this example) for the clients that will connect to the cluster through the load balancer.
- A machine with dual network interfaces connected to both networks running Linux with UltraMonkey Load Balancing Solution installed to act as a load balancer for the clustered LiquidOffice servers. For installation instructions please see <http://www.ultramonkey.org/2.0.1/installation.html>
- Two windows servers on the private network that will host the LiquidOffice instances.
- A database server on the private network that is compatible with LiquidOffice v6.x.
- A windows server on the private network to act as a file share.

---

## NETWORK DESIGN

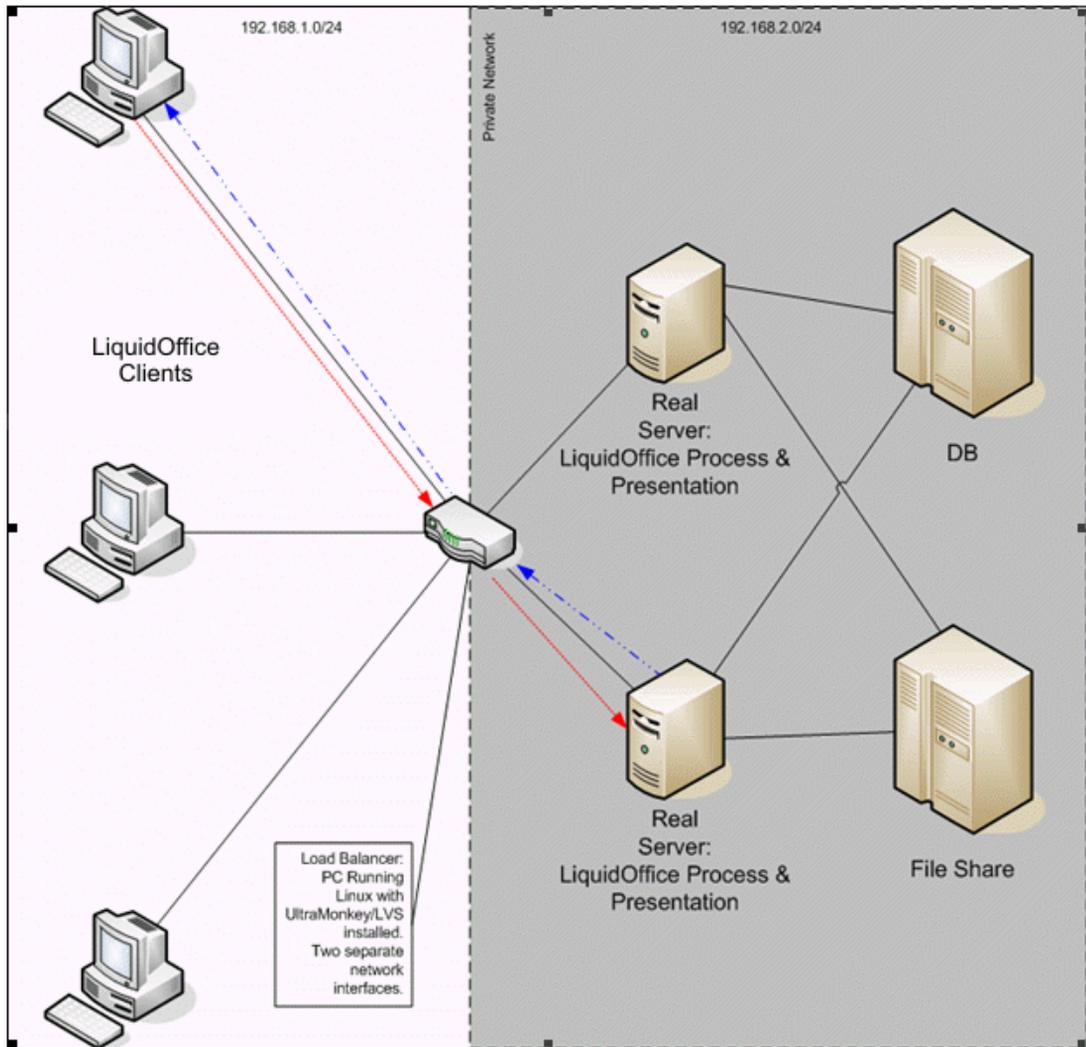
This installation will require two networks with separate IP address ranges. All of the LiquidOffice server installations and the network resources they will depend on must exist on the private network. The client machines must reside on the public network. The load balancer will have interfaces on each network. The load balancer will have one IP on the private network, which will serve as the default gateway for the real servers and resources. The load balancer will have its own IP address on the public network for direct access and administration. In addition, the load balancer will have the virtual server ip address assigned as an alias to its public network interface. We will assume that the LiquidOffice servers will handle both the Process Server and Presentation Server role (single-tier configuration). While the database and resources file share are included in the table, we will not focus on the details of these configurations other than to specify that these resources must be on the private network.

See [Example Network Settings](#) for more information.

## Example Network Settings

Value	Example
Private Network	192.168.2.0 netmask 255.255.255.0
Public Network	192.168.1.0 netmask 255.255.255.0
Load Balancer Private IP	192.168.2.1
Load Balancer Public IP	192.168.1.24
Virtual IP address	192.168.1.10
Virtual Server DNS name (Referenced as "Fully Qualified Domain Name" during installation)	loforms.company.com
Cluster Multi-cast port	43210
Real Server #1 Private IP	192.168.2.101 netmask 255.255.255.0 gateway 192.168.2.
Real Server #2 Private IP	192.168.2.102 netmask 255.255.255.0 gateway 192.168.2.1
Database Server Private IP	192.168.2.120
File share Server UNC path (on private network)	\\fileshare\Resources

## Example of Cluster with Load Balancer



---

## EXAMPLE CONFIGURATION AND INSTALLATION

This example demonstrates Load Balancing with LiquidOffice and Linux Virtual Server.

Once the IP addresses are in writing, configuring the load balancer is a fairly simple exercise.

### Login

Login to the Linux machine as root (you should be able to see the command line waiting with a # prompt). Some commands listed below return much more information than we are interested in. In these cases, any sections or removed text will be shown as '...'.

### Controller — IP Relationship

First, we will determine which network controller instance is tied to which IP address:

```
[root@lb root]# ifconfig -a
eth0      Link encap:Ethernet  HWaddr
00:0C:F1:E8:D0:FF
          inet addr:192.168.1.24
Bcast:192.168.1.255  Mask:255.255.255.0
          UP BROADCAST RUNNING MULTICAST
MTU:1500  Metric:1
...
eth1      Link encap:Ethernet  HWaddr
00:90:27:44:AA:FF
          inet addr:192.168.2.1
Bcast:192.168.2.255  Mask:255.255.255.0
          UP BROADCAST RUNNING MULTICAST
MTU:1500  Metric:1
```

Here we can see that eth1 is our private network interface (covering the 192.169.2.0/24 network) and eth0 is our public network interface (covering the 192.169.1.0/24 network).

### Configure Cluster IP Address

We need to configure an IP alias for the cluster IP address on eth0 (Sections marked ... have been removed for clarity):

```
[root@lb root]# ifconfig eth0:1 192.168.1.10
netmask 255.255.255.0 up

[root@lb root]# ifconfig -a
eth0      Link encap:Ethernet  HWaddr
00:0C:F1:E8:D0:DD
          inet addr:192.168.1.24
Bcast:192.168.1.255  Mask:255.255.255.0
          UP BROADCAST RUNNING MULTICAST
MTU:1500  Metric:1
...
eth0:1    Link encap:Ethernet  HWaddr
00:0C:F1:E8:D0:DD
          inet addr:192.168.1.10
Bcast:192.168.1.255  Mask:255.255.255.0
          UP BROADCAST RUNNING MULTICAST
MTU:1500  Metric:1
```

For the details about how and why this creates an alias, refer to the man pages for the ifconfig command. This can also be configured automatically by using heartbeat or another similar utility, but this is beyond the scope of the current document.

---

## Create ldirectord.cf File

The next important step is to create the ldirectord.cf file in the /etc/ha.d/conf directory with the following contents (using either gedit or vi):

```
# START HERE
# Script shamelessly borrowed from www.ultra-
monkey.org
# Global Directives
checktimeout=5
checkinterval=5
autoreload=yes
logfile="/var/log/ldirectord"
quiescent=yes

# Define our virtual server to answer at
192.168.1.10 on port 80,
# With real servers at 192.168.2.101 and
192.168.2.102
# Configure sticky sessions with a default tim-
eout of 6 minutes (360 seconds)
virtual=192.168.1.10:80
    real=192.168.2.101:80 masq
    real=192.168.2.102:80 masq
    persistent=360
    service=http

    checktype=negotiate
    request="/"
lfservlet?DFS__Action=NOPE&DFS__Client=xml"
    receive="Success"

# END HERE
```

## Start ldirectord.cf

Once a configuration file is in place ldirectord can be started:

```
[root@lb conf]# ldirectord /etc/ha.d/conf/
ldirectord.cf start
[root@gold conf]# ipvsadm
IP Virtual Server version 1.0.10 (size=65536)
Prot LocalAddress:Port Scheduler Flags
  -> RemoteAddress:Port          Forward Weight
ActiveConn InActConn
TCP  loforms.company.com:http wrr persistent
360
  -> 192.168.2.101:http           Masq     0
0          0
  -> 192.168.2.102:http           Masq     0
0          0
```

The ldirectord daemon will now check for the presence of the real servers every five seconds or so and add or remove entries for the real servers as they are brought up or down. Notice that the ipvsadm will not necessarily show the real server listings until after the first time they have responded correctly to the test request set in the ldirectord.cf file. Log off from the linux machine.

---

## LiquidOffice Installation

We can now start the installation of the first LiquidOffice cluster member. The information that will be different or notable for this installation are as follows:

### Installation Type

Be sure and pick **Cluster Install (Create New Cluster)** for the first server.

### Location for Process Server Resources

This should be set to the UNC path to the file share noted above (i.e. \\fileshare\resources ). Note that this share must allow the user that installs LiquidOffice read/write/modify permissions. Also note that the same exact UNC path must be used for all installations in a cluster.

### Protocol Configuration

Enter loforms.company.com:80 (or the appropriate values from the table above) in the field marked 'Fully Qualified Domain Name'. This field is critical, and it determines the url that end users must use to access the cluster.

### Multi-cast Service Settings

Enter the chosen value for the clusters multicast port. This can be any number between 1 and 65535 with ports above 1024 more likely to work without hassle and ports about 10000 most likely to work without a conflict. The example uses port 43210.

## Additional Servers

Be sure to choose 'Add this server to an existing cluster' in the Installation Type dialog for the second and additional cluster members. Beyond that, any answers required should be given the exact same answer as used in the first installation.

### Starting up the Cluster

If the windows service will be used to start the server be sure the user/password used for the service has rights to access the shared resources directory on the given file share. Start the first server, and about two to three minutes later start the second server. Log on to the load balancer and perform the following check:

```
[root@gold conf]# ipvsadm
IP Virtual Server version 1.0.10 (size=65536)
Prot LocalAddress:Port Scheduler Flags
  -> RemoteAddress:Port           Forward Weight
ActiveConn InActConn
TCP  loforms.company.com:http wrr persistent
360
  -> 192.168.2.101:http             Masq    1
0          0
  -> 192.168.2.102:http             Masq    1
0          0
```

As shown above, the weight assigned to the two real servers should be set to 1 if they are responding properly. You should now be able to connect to the cluster at the cluster DNS name (for example http://loforms.company.com). As connections are made and closed, the values of ActiveConn and InActConn shown will change to reflect the current numbers of connections to each real server in the cluster. A review of the LVS Tutorial will provide more detailed tools to troubleshoot and monitor the cluster from the load balancer.

---

# Appendix B

## Security Quick Start for Windows

### ABOUT APPENDIX B

This Appendix gives a high level overview of the steps that should be considered a minimum effort to secure a test, development, or production LiquidOffice instance. For convenience, these steps are arranged in order of pre-installation, installation and post-installation. All user and group modifications are shown as performed in an Active Directory domain on Windows 2000. All file and share permissions are shown as performed on Windows 2003 SP1 servers.

### PRE-INSTALLATION TASKS

#### Establish an Operating System User and Group for LiquidOffice Use

The use of an Active Directory domain account is required if the LiquidOffice instance is clustered, and highly suggested even in the case that the LiquidOffice instance is standalone. The creation of a user as well as a group allows a bit more fine grained control over file and directory permissions. As an example, the user can have full control over the installation directories while the group permissions would only allow modification of the existing files. This would allow a small group of individuals to configure specific files without risk of files being deleted. In all further discussions, this user will be called the 'Cardiff' user and the group called 'Cardiff Group'.

1. Create a 'Cardiff' user.



2. Create a 'Cardiff Group'.



## Temporarily Add 'Cardiff' User to the Domain Admins Group

Many of the installation tasks perform actions that require a fairly high level of administrative access. With recent versions of Microsoft Windows, the ability to add and alter registry entries during installation has been limited to a very specific set of users/groups. The most straightforward way of accomplishing these tasks without a large number of extra steps is to add the 'Cardiff' user to the 'Domain Admins' group before configuration and installation, and remove that membership after installation and configuration is completed.

## Create Shared Resources Directory

While logged in as the 'Cardiff' user, create a directory on the server that is to host the shared resources file share. This should not be on a machine that will also host a LiquidOffice Server node. To configure the security for this folder, remove all inherited permissions, then assign Full Control permission to the 'Cardiff' user, Modify permission to the Cardiff Group, and possibly either Full Control or Modify permission for the 'Domain Admins' group on the Active Directory domain and local machines Administrators group.

1. Set Advanced Permissions by accessing the Advanced Security Settings dialog.



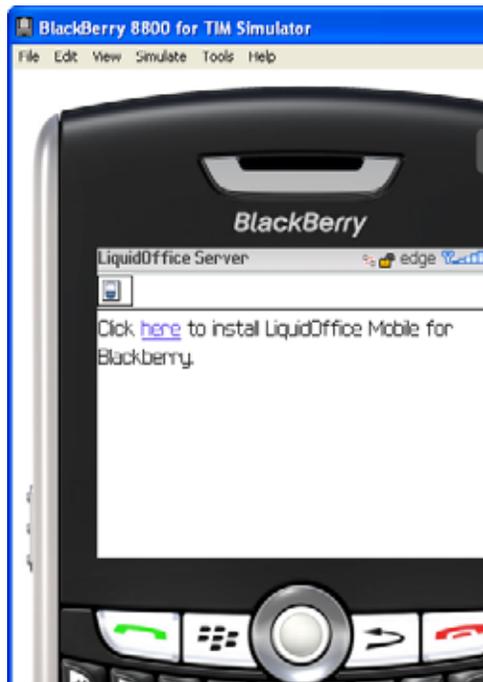
2. Uncheck **Allow inheritable permissions from the parent to propagate to this object and all child objects. Include these with entries explicitly defined here.**

3. A small Security dialog appears.

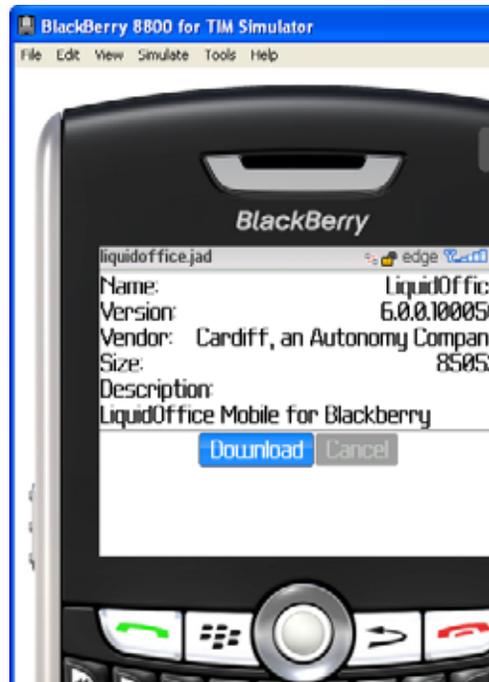


4. Click **Remove**.

5. Set **Full Control** permissions for the 'Cardiff' user.



6. Set **Modify** permissions for the 'Cardiff Group'.



## Setup Shared Resources File Share

While logged in as the 'Cardiff' user on the server that will host the Shared Resources file share, navigate to the Sharing tab of the Shared Resources Directory properties dialog. Enable the 'Share this folder' radio button. Open the 'permissions' dialog and remove any entries that say 'Users', 'Everyone', 'Domain Users'. Add an entry for the 'Cardiff' user and enable all permissions. Add an entry for the 'Cardiff Group' and enable either all permissions or change/read permissions, add entries for the 'Domain Admins' group as appropriate for the network environment.

1. Enable sharing on the shared resources folder.



2. Set **Full Control** share permissions for the 'Cardiff' user.



- 
3. Set **Change** share permissions for the 'Cardiff Group'.



## INSTALLATION TASK

### Install LiquidOffice Server Components

On each node of the cluster, log in as the 'Cardiff' user and install the software following the directions in the Install and Admin guide.

## POST-INSTALLATION TASKS

### Set Folder Permissions for Installed Files

After the Installation has completed on each node of the cluster, and while still logged in as the 'Cardiff' user, navigate to the C:\Program Files\Cardiff directory (assuming default folder locations were used during installation) and remove all inherited permissions. Add full control permissions for the 'Cardiff' user and either full control or modify permissions for the Domain Admins account.

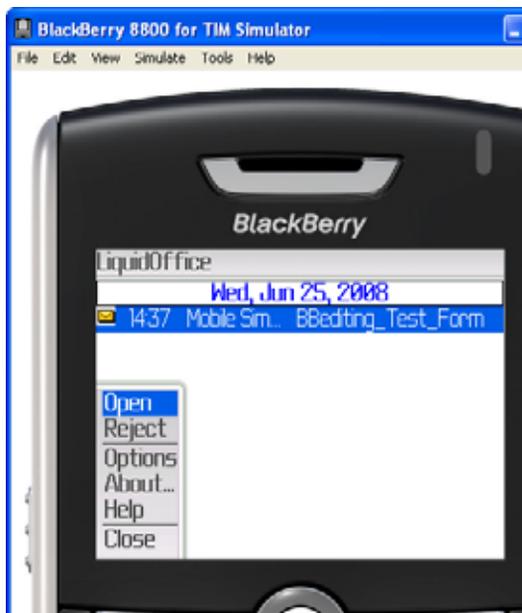
### Set Log On Account for LiquidOffice Server Service

While still logged in as the 'Cardiff' user, open the Services control panel and find the entry for LiquidOffice Server. By default this service will be configured to use the Local System account. Navigate to the Log On tab in the service properties dialog and select 'This Account'. Enter or search for the 'Cardiff' user account and enter the password in both text entry boxes. Save these changes.

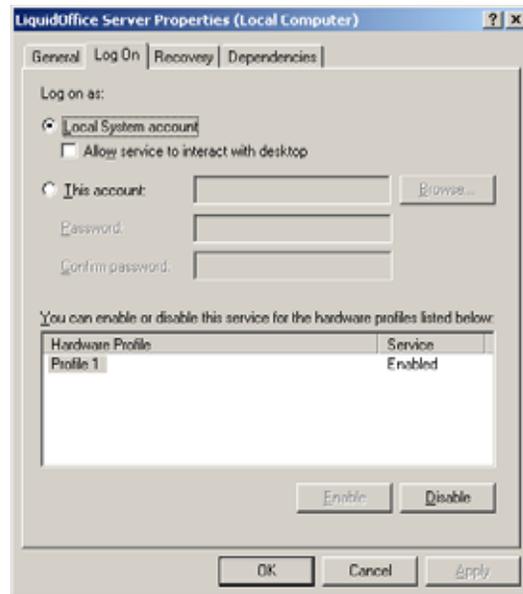
1. Select **LiquidOffice Server** service entry.



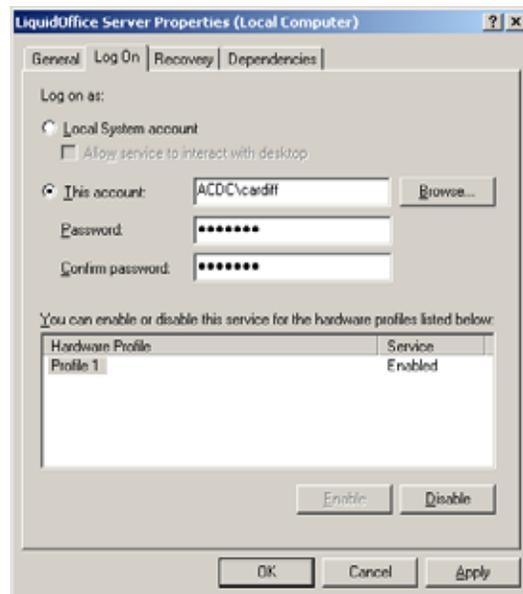
2. Open the properties for **LiquidOffice Server** by double-clicking the LiquidOffice Server service.



3. Click the **Log On** tab.



4. Select the 'Cardiff' user account and set the password.



---

## Disable Optional Components

Before launching a server into production, verify whether or not the **extras.xml** file is necessary. This file is used in the following cases:

- Mobile client install
- Data client install
- Outlook client install

If you do not need any of these options, this file should be moved from the (xmlserver)/xmlbase/conf/Catalina/localhost directory to a safe backup location. When the server starts, this context will not be made available by the LiquidOffice Server.

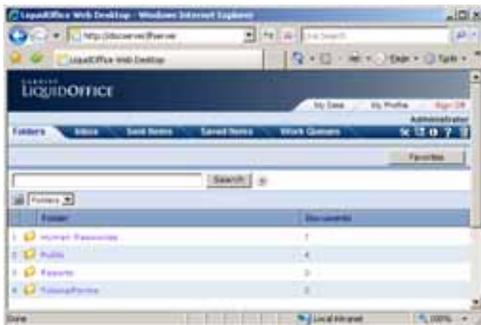
## Remove 'Cardiff' user from the Domain Admins Group

After these tasks have been completed, the 'Cardiff' user can be removed from the Domain Admins group. When hot fixes, service packs, or upgrades are performed, the user will need to be added back to the Domain Admins group and removed after maintenance is complete.

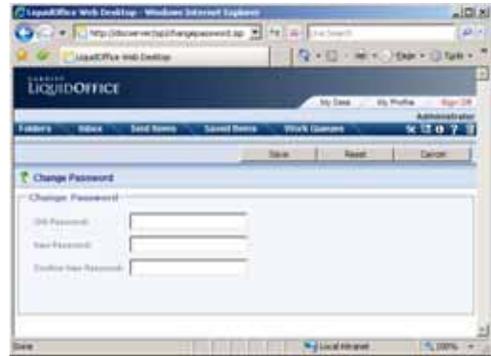
## Change LiquidOffice Server Administrator Password

This may seem obvious but it bears repeating. Once the first server is started, the first task to be done is to log in to the web desktop, select the My Profile tab, select the Password... button and change the administrator user password.

1. Log into the LiquidOffice Web Desktop as 'Administrator' and select **My Profile**.



2. Click **Password** and change the default password.



---

## Additional Steps

The other possible tasks are highly dependent on the environment (development, production, private facing, public facing) and are mostly focused upon limiting the network traffic that is visible to external users and resources. As a good starting point almost all production LiquidOffice servers and resource dependencies would likely do well to be placed behind a load balancer or firewall, with only http traffic allowed in/out of the 'private' network where the LiquidOffice Server and its resources reside.

Some example tasks:

- Limit multicast traffic on multi-homed machines to one specific private network interface.
- Limit other cluster communications on multi-homed machines to one specific private network interface.
- Ensure that communications to other resources (database, file shares, SOAP providers, etc...) happen on the private network.
- Use LDAPS for user information queries to an LDAP server.

---

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